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Acculturation and Tobacco/Illicit Drug Use in Hispanic Youth 🔒

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Abstract and Keywords

This chapter explores the incipient role of acculturation in cigarette smoking, tobacco use, and use of illicit drugs in Hispanic youth in the United States. It first examines the conceptual foundations of acculturation, including early unidimensional models and later bidimensional and multicomponent perspectives of acculturation. It then reviews empirical studies linking acculturation with cigarette/tobacco and, separately, illicit drug use among Hispanic youth. The cumulative body of evidence is reviewed in terms of methodological strengths and weaknesses and how they sharpen our focus on acculturation in development. The chapter also examines three key developmental mechanisms that may account for the underlying relations between acculturation and drug use: (1) cultural stress, (2) family functioning, and (3) change in cognitive functioning related to drug use. The chapter closes with several recommendations that may help clarify the developmental linkages between acculturation and Hispanic youth drug use and should be addressed by future research.

Keywords: acculturation, developmental mechanism, etiology, Hispanic youth, cigarette, tobacco, illicit drug use

Scholarly interest in the subject of acculturation and its developmental influences on youth has substantially increased over the last few decades (Chirkov, 2009). Stimulus for this interest arises partly as a result of the large and increasing flow of international migrants into the United States (Grieco et al., 2012). Broadly speaking, acculturation refers to the process of blending into a new culture, and refers primarily to how well an individual relaxes his or her cultural moorings and adapts to the new receiving culture (Berry, 1980). For many individuals, relocation from their homeland and the process of encountering a new culture can be stressful (Berry, 2006; Rudmin, 2009). In the absence of various supports (i.e., family and community), the experience can be unsettling, leading to depression (Gonzales, Deardorff, Formoso, Barr, & Barrera et al., 2006) or other maladaptive outcomes like drug use (Romero, Martinez, & Carvajal, 2007). As a

result, there has been a growing literature that examines relationship between acculturation and a wide range of positive and negative indicators of psychosocial functioning (e.g., Raffaelli, Zamboanga, & Carlo, 2005; Sam, 2000; Schwartz, Zamboanga, & Jarvis, 2007; Umaña Taylor & Updegraff, 2007). This chapter examines the incipient role of acculturation in cigarette smoking, tobacco use, and use of illicit drugs in Hispanic youth in the United States (for review of acculturation and alcohol see, Zamboanga, Tomaso, Lui, this volume).

To begin with, we confine this review to studies of Hispanic acculturation for two reasons: (1) Hispanics are the largest and fastest-growing minority group in the United States (Ennis, Ríos-Vargas, & Albert, 2011), and (2) evidence of significant health disparities in Hispanic populations has encouraged interest in the different forms of vulnerability that may arise from acculturation stress. The first concern really attends to the public health concerns that acculturation raise if we fail to enrich our knowledge regarding the mechanisms that connect acculturation with negative developmental outcomes. The second concern addresses the specific vulnerabilities that accompany Hispanics residing in the United States (as well as other countries). While we can reasonably expect the process underlying acculturation to be equivalent across ethnic and racial groups (all emigrants encounter a new culture once they leave their homeland for new cultural surrounds), we regard this as an important theoretical and empirical question that requires further empirical scrutiny.

There is also separate motivation for the focus on acculturation and drug use among Hispanic youth. Here, we believe that the underlying process linking acculturation with outcomes like drug use may be similar for youth and adults. However, for adults in particular, this relationship may be confounded by situational (i.e., length of residency) and contextual (i.e., economic) factors. The longer immigrants remain in the United States the more they have time to make personal adjustments, develop appropriate coping skills, and find ways to ameliorate their experience of cultural stress. While this bodes well for the individual it does little to inform prevention efforts that target youth experiencing cultural stress. In this manner, differences in acculturative experiences that accrue from maturation alone suggest the importance of focusing on developmental etiology in order to better understand the role of acculturation in the early stages of vulnerability. As a result, we primarily confine our review to studies conducted with Hispanic youth.

Before discussing the explanatory role of acculturation in youth adaptation, we briefly review the conceptual foundations of acculturation, exploring more fully how it is defined and applied more broadly in the developmental literatures. Other chapters in this volume, including those in the first section, present a much more detailed discussion of acculturation and furthermore examine its place in the developmental and public health

literatures. We then provide a summary review of empirical studies linking acculturation with cigarette/tobacco and, separately, illicit drug use among Hispanic youth, emphasizing conceptual and methodological concerns that are prevalent in the literature. We also examine key developmental mechanisms proposed to mediate (or moderate) the influence of acculturation on cigarette/tobacco and illicit drug use. The chapter closes with several recommendations that may help clarify the developmental linkages between acculturation and different types of drug use in Hispanic youth.

Conceptualization and Operational Definitions of Acculturation

Current conceptualizations of acculturation have largely grown out of what is termed the "unidimensional" view, a framework that places the acculturative experience along a single continuum. This continuum is used to describe an immigrant's ability to blend with their new cultural surrounds once they left their country of origin. While an individual could reside anywhere on the continuum (from low to high), their placement essentially assumes "successful" acculturation involves complete adoption of the receiving-culture and forfeiture of their parent cultural heritage (Gordon, 1964). In contrast to the unidimensional view, contemporary views of acculturation have increasingly cast acculturation as a bidimensional process (Berry, Phinney, Sam, & Vedder, 2006; Schwartz, Unger, Zamboanga, & Szapocznik, 2010). According to Berry's (1980) seminal acculturation model, receiving-culture acquisition and heritage-culture retention are independent dimensions. Following this bidimensional conceptualization, individuals can acquire some aspects of the receiving culture while still retaining their own heritage culture. In this respect, acquiring the culture of the receiving context does not imply that an individual will discard their own cultural heritage; rather, they will judiciously straddle a fence between two cultural worlds with different leanings depending on their cultural preferences.

Several authors have extended Berry's (1980) original conceptualization, suggesting that acculturation is multidimensional, not only because it contains numerous cultural streams (i.e., heritage culture versus receiving culture), but also because it encompasses multiple components (Escobar & Vega, 2000; Rudmin, 2009). Schwartz et al. (2010), for instance, suggests three relevant components: *cultural practices* (i.e., behaviors such as language use, choice of friends, and cultural customs and traditions), *cultural values* (i.e., belief systems associated with a specific context or group), and *cultural identifications* (i.e., strength of commitment and attachment a person feels toward their cultural heritage and/or the culture of the receiving context). Although early conceptualizations of

acculturation examined at most one or two of these components, more recent arguments suggest that acculturation is best understood as the confluence of several components. Indeed, both Castillo and Caver (2009) and Schwartz et al. (2010) have suggested a model that crosses the three components of acculturation across two dominant cultural streams, yields a total of six facets of acculturation: US practices, heritage practices, individualist values, collectivist values, US identification, and heritage identification. This blending of all three components with both cultural streams provides a more complete picture that is faithful to the theoretical definitions and original conceptualizations of acculturation (Berry, 1980; Berry et al., 2006).

Acculturation and Cigarette and Illicit Drug Use

Our review of the literature examining Hispanic youth acculturation and different types of drug use includes two interrelated components. We first begin with studies examining the direct effects of acculturation on cigarette smoking, tobacco use, and illicit drug use. Following this discussion, we then incorporate a discussion of key mediators and moderators that influence relationship between acculturation and drug use. Zamboanga, Tomaso, and Lui (this volume) addresses acculturation with respect to alcohol use.

Examining Relationship Between Acculturation and Cigarette/Tobacco Use

The literature examining relationship between acculturation and cigarette/tobacco use among Hispanic youth is not large by any stretch of the imagination. Indeed, a review of PsychInfo and PubMed using the terms Acculturation, "Hispanic OR Latino OR Latin," "Adolescent OR Youth," and "Tobacco OR Smoking OR Cigarette OR Smokeless OR e-cigarettes" turned up 145 articles.[1] Of these documents fewer than 54 peer-reviewed manuscripts were relevant to our review. A careful read of this body of work highlights several conceptual and methodological concerns. A salient conceptual problem includes the use of poorly defined measures, and furthermore, many of these rely on unidimensional conceptualizations of acculturation. Early studies also suffered from methodological problems, including reliance on cross-sectional data, which diminishes the ability to infer causal processes. The same studies also use single item indicators or poorly validated measures to capture the complex social-psychological processes that undergird acculturation. For example, researchers commonly used demographic proxies

(i.e., race/ethnicity or duration of stay in the United States) to infer complex acculturative influences.

The absence of psychometric refinement led several authors to criticize studies of acculturation on the basis that researchers were not really providing a psychological foundation to the experience of acculturation but rather using measures of preferred language as a proxy (Lorenzo-Blanco, Unger, Ritt-Olson, Soto, & Baezconde-Garbanati, 2011; Rudmin, 2009). As we discuss subsequently, the combination of a limited "unidimensional" view of acculturation and the absence of strong causal (i.e., longitudinal) designs seriously hamper our understanding of the developmental processes linking acculturation with cigarette/tobacco use. Notwithstanding these noted criticisms, early studies provided a foundation for the current understanding of the relationship between acculturation and cigarette/tobacco use and thus warrant consideration. Consistent with how the field developed, our summary begins with studies employing unidimensional measures of cultural practices, values, and identifications (respectively) and then shifts toward more recent studies using bidimensional and multicomponent measures.

Cultural Practices

For the most part, studies relying on a unidimensional view of acculturation have invoked a measure of language familiarity or language preference as the single best method to represent acculturation. Many of these studies indicate that Hispanic youth who prefer or speak more English report higher levels of cigarette use. For example, using a nationally representative data of 12- to 18-year-old Hispanic youth obtained from the National Household Survey on Drug Abuse (NHSDA), Gfroerer and Tan (2003) reported that English language usage was associated with higher lifetime cigarette use, even after controlling for gender, age, family income, region, and population density. Using a relatively large community sample (n = 4,352) of 5th, 8th, and 10th grade Hispanic adolescents from California, Unger et al. (2000) found that English language usage was associated with greater reported lifetime cigarette smoking. Botvin, Dusenbury, Baker, James-Ortiz, and Kener (1989) used data from a longitudinal drug-prevention trial and found that English-speaking Hispanic seventh graders in New York were more likely to report cigarette smoking on posttest. Marsiglia, Kulis, Hecht, and Sills (2004) found that language use was significantly correlated with higher lifetime, but not recent (last 30 days), cigarette use in a relatively large community sample of Hispanic seventh graders (n = 4,364), even after controlling for students' grades and socioeconomic status. Using a community sample of young Latinas (age 14–24) from Los Angeles, California, Kaplan, Nápoles-Springer, Stewart, and Pérez-Stable (2001) found that language acculturation was associated with early stages of cigarette smoking, but not with the transition to regular smoking, after controlling for demographic characteristics, cultural values,

parental and peer smoking behavior, and smoking-related norms (i.e., perception of peer use).

Other studies provide less support linking language-based measures of acculturation and cigarette use. Indeed, several studies report either null or very small statistical relationship. For example, using a sample of US- and foreign-born Cuban adolescent boys in the sixth and seventh grades ($n = 1,700$), Vega, Gil, and Zimmerman (1993) found that lifetime cigarette use did not significantly differ across monolingual Spanish and English speakers. Using a smaller sample ($n = 214$) of Hispanic adolescents (9th–12th grade) from San Diego, California, and a multi-item measure of cultural practices (e.g., language speaking preference, ethnicity of friends), Lovato et al. (1994) reported no significant difference in average acculturation scores for adolescent past 30-day smokers versus nonsmokers. Elder et al. (2000) used a well-validated measure of acculturation based on cultural practices and reported that after controlling for demographic characteristics, peer and household smoking, and social support, acculturation and lifetime cigarette use were not significantly related.

Using a multi-item measure of cultural practices (i.e., favorite foods, friends, customs, holidays, and mass media preferences), Unger et al. (2006) also found no significant relationship between acculturation and lifetime cigarette use in a longitudinal study employing an ethnically diverse sample of high school students ($n = 1,990$). Similarly, Soto et al. (2011) using a relatively large sample of Hispanic ninth graders ($n = 1,616$), found no significant relationship between acculturation and cigarette use, controlling for demographic characteristics, parental and peer drug use, and a measure of cultural values.

Cultural Values

Several studies have used cultural values as the primary means to assess acculturation. Some studies find that weak cultural values place youth at risk for certain types of drug use, whereas other studies fail to empirically confirm this vulnerability. For example, Kaplan et al. (2001) found that *familism*, a broad term that encompasses strong identification, loyalty, reciprocity, and solidarity with both nuclear and extended families (Marín & Marín, 1991), protects youth from lifetime cigarette use but not from the transition to regular smoking. In a one-year longitudinal study, Unger et al. (2006) reported that respect for adults and interpersonal harmony was significantly and inversely associated with lifetime cigarette use, even after controlling for demographic characteristics. Soto et al. (2011) evaluated the effects of various Hispanic cultural values (i.e., familism, *respeto*, and machismo) on lifetime cigarette use. The authors reported that *respeto* was associated with a lower risk for lifetime cigarette use, whereas familism and machismo were not significantly associated with cigarette smoking. Unger, Ritt-Olson, et al. (2002) and Castro, Stein, and Bentler (2009) found no significant relationship

between cultural values and cigarette use. Specifically, in a relatively small and culturally diverse high school sample (n = 211), Unger, Ritt-Olson, et al. (2002) found that neither familism, filial piety, nor collectivism was significantly associated with lifetime cigarette use, controlling for age, gender, ethnicity, and socioeconomic status. Similarly, Castro et al. (2009) did not observe a significant relationship between traditional family values and lifetime cigarette use in a sample of 945 Latino sixth to eighth graders.

Cultural Identification

Ethnic identity is also a component of acculturation that has received considerable attention. Research within the past decade has consistently found that youth who experience greater bonding and stronger ties to their ethnic group and explore and come to an understanding of what their ethnic group membership means to them report higher levels of psychosocial functioning (for a review, see Umaña-Taylor, 2011). Unfortunately, even when guided by a powerful theoretical framework, studies employing ethnic identity as a proxy for acculturation have produced mixed findings. Several researchers suggest that ethnic identity is protective, with youth reporting higher ethnic identity also reporting lower levels of cigarette use. Love, Yin, Codina, and Zapata (2006), for instance, surveyed a sample of 1,892 Mexican-American 8th, 9th, and 10th grade students from South Texas and reported that ethnic identification was protective against regular cigarette smoking or smoking more than 11 times in the last month, controlling for gender, socioeconomic status, and grade. Castro et al. (2009) also found ethnic pride was protective against lifetime cigarette use. Marsiglia, Kulis, and Hecht (2001), however, found that the association between ethnic pride and recent cigarette use was only marginally significant in a sample of Mexican American seventh graders.

A different set of studies provides evidence that ethnic identity is a risk factor and positively associated with substance abuse. For example, the study by Marsiglia, Kulis, Hecht, and Sills (2004), which used a sample of 2,400 Mexican seventh-grade students, found that ethnic identification was positively associated with number of cigarettes smoked in last 30 days, controlling for age, gender, usual grades, socioeconomic status, and English preference. Similarly, Zamboanga, Schwartz, Jarvis, and Van Tyne (2009) reported that ethnic identity was positively associated with greater cigarette use among Hispanic adolescents who had already initiated cigarette smoking. No significant relationship was found between ethnic identity and lifetime cigarette use, the latter measured using a dichotomous "Yes/No" score.

Findings from Studies Employing a Bidimensional Perspective

Over and above the methodological inconsistencies, which we discuss later in the chapter, the reliance on a unidimensional measures of acculturation has been suggested to underlie these mixed findings. This methodology leaves unclear whether the effects of acculturation on health outcomes are due to immigrants' immersion in and acquisition of

the receiving culture or whether they are a result of the loss (or rejection) of their heritage culture (Schwartz et al., 2010). Use of a unidimensional perspective to describe acculturative experiences suggests that another more subtle process may be at work that involves what we term the "push versus pull" effect (Roysircar-Sodowsky & Maestas, 2000). According to this view, some individuals may experience acculturation as a "push" into new and unchartered territory (thus causing some ego-dystonic imbalance), while others experience acculturation as a "pull" away from their native heritage and cultural roots. While this argument may imply a unidimensional conceptualization, individuals may jointly experience a wide range of stressors associated with both the pushes and pulls of acculturation (Rudmin, 2003).

With a unidimensional approach there is no "middle" ground where the individual can reconcile their culture when cast in the context of the receiving culture. They either move in one direction (toward immersion in the new culture) or they reinforce their native culture. The push toward embracing a new culture and likewise the pull away from their cultural roots is replete with tension and inevitably causes stress (e.g., Rudmin, 2003). On the one hand, a "pulling" effect can engender disenfranchisement from cultural roots, causing remorse and inner tension. A "pushing" effect can be overwhelming, encouraging immigrant youth to try and fit in, leading to rash, if not impulsive, decisions that may result in poor choices (i.e., uptake of cigarettes to blend in and look cool). In either case, the sense of personal imbalance can adversely affect a youth's identity and leave them doubting their allegiances and/or feeling alienated. What is needed in order to further clarify this framework is a better sense of whether acculturation involves pushing or pulling or some combination of both that fosters stress and furthermore from a prevention standpoint, exploration of what role coping skills play to offset these processes.

The movement to implement a more variegated bidimensional conceptualization of acculturation has been driven in part by the need to clarify the activities that constitute the "push" and the "pull" processes in order to better understand the way in which acculturation influences various health outcomes. For example, using a validated and more comprehensive measure of Hispanic and US cultural practices, Zamboanga et al. (2009) and separately Unger et al. (2009) found a significant negative association between adolescents' Hispanic orientation and cigarette use. More recently, Unger et al. (2014) modeled growth using longitudinal data and found that initial baseline levels of Hispanic acculturation were negatively associated with rate of growth in cigarette use over time. The inverse association between intercept and slope terms indicates that early levels of Hispanic orientation were protective against the escalation of smoking over time. It is important to note that neither Zamboanga et al. (2009) nor Unger et al. (2009, 2014) found a significant relationship between US orientation and cigarette use. From these and related studies using bidimensional conceptualizations and modeling

multicomponent indicators of acculturation, we can gather that the loss of one's heritage practices, values, and identifications poses a greater risk for cigarette use among youth than the adoption of US cultural practices, values, and identification.

Examining Relationships Between Acculturation and Illicit Drug Use

The basic premises outlined so far encompassing studies of acculturation and cigarette use also apply to studies of Hispanic youth illicit drug use. Most of the studies that bear on this subject have examined acculturation in the context of marijuana, cocaine, and inhalant use. After alcohol and cigarettes, these are the three most prevalent illicit drugs that youth report using. Our examination of the literature on acculturation and drug use reinforces what we reported earlier in this chapter. That is, there are only a handful of studies that have examined these developmental relationships,[2] and they suffer from the same conceptual concerns and methodological limitations that were addressed before. Indeed, most of the studies we encountered employed a unidimensional measure of cultural practices as the primary means of conceptualizing acculturation. In addition, studies examining acculturation and drug use also introduce new methodological concerns. One in particular involves the aggregation of individual measures of drugs into a composite score in order to avoid statistical estimation problems that arise from low base rates (most youth do not engage in hard or illicit drug use). Another concern is the use of varied approaches to model different stages of drug use, with some studies using acculturation to predict initiation or first-time use (going from a nonuser to a user) while others examine the role of acculturation in more protracted levels of use (i.e., frequency or intensity measures). In either case, the different methodological approaches cloud the picture we can obtain of whether acculturation influences illicit drug use.

Cultural Practices

Putting aside these methodological concerns, several studies framed by the unidimensional approach suggest that acculturation is positively associated with illicit drug use. For example, Gfroerer and Tan (2003) found English language preference to be associated with higher lifetime marijuana use in a nationally representative sample of Hispanic youth, even after controlling for demographic characteristics, region, and population density. In a relatively large ($n = 1,229$) prospective, longitudinal study with Hispanic youth from urban New York, Epstein, Botvin, and Diaz (2001) found that English preference was associated with marijuana use at baseline and 1-year follow-up. Marsiglia, Kulis, Hecht, and Sills (2004) also found English preference to be significantly related to lifetime marijuana use among a large sample of Hispanic seventh graders ($n = 4,364$), controlling for demographic characteristics and ethnic identification. Using a sample ($n = 3,186$) of seventh graders, Kulis, Marsiglia, Sicotte, and Nieri (2007) found that English

preference was associated with higher levels of recent marijuana use. Using data collected from the 2004 Florida Youth Substance Abuse Survey (FYSAS), a statewide collaborative effort, Saint-Jean (2010) found that English preference was associated with higher levels of reported lifetime marijuana use.

Fewer studies have examined acculturation in the context of "hard illicit drugs" (e.g., inhalants, hallucinogens, cocaine, etc.). This probably results from low base rates observed with this type of drug use among youth (Johnston, O'Malley, Bachman, Schulenberg, & Miech, 2014). Still, several recent findings suggest that acculturation plays an integral role in the use of these "hard" illicit drugs. For example, in a relatively large sample ($n = 3,186$) of Mexican American adolescents, Miller, Miller, Zapata, and Yin (2008) found English preference was associated with both marijuana and cocaine use. Using a smaller sample of Mexican American youths from Los Angeles ($n = 339$), Perez, Padilla, Ramirez, Ramirez, and Rodriguez (1980) found that English preference at home was positively associated with lifetime use of both inhalants and PCP, controlling for demographic characteristics, school attendance, peer use, and self-concept. Myers et al. (2009) examined a community sample of Hispanic youth ($n = 714$) from southern California and reported that language preference was associated with increased risk of lifetime marijuana and "hard" drug use (i.e., cocaine, ecstasy, hallucinogens, stimulants, etc.), controlling for demographic characteristics.

Other studies fail to confirm a significant relationship between acculturation and "hard" drug use. In one of the earliest studies that addressed this issue, and using a small sample of "high-risk" Mexican American youth ($n = 175$, age 13 to 17), Simpson and Barrett (1991) found no significant relationship between language preference and lifetime inhalant drug use after controlling for demographic characteristics and perceived discrimination. The lack of a substantial and significant relationship between acculturation and "hard" drug use is also observed in more recent studies. For instance, Soto et al. (2011) found no significant relationship between acculturation and lifetime marijuana use among Hispanic adolescents, controlling for demographic characteristics, measures of parental and peer drug use, and cultural values. Tonin, Burrow-Sanchez, Harrison, and Kircher (2008) reported that language preference was not related significantly to recent inhalant or marijuana use in a sample of 2,964 Hispanic youth, controlling for individual and school-level variables (i.e., school size, student commitment, proportion of minority youth). Likewise, Miller (2011) found English preference was not significantly associated with marijuana or "hard drug use." Ramirez et al. (2004) examined relationships between acculturation and drug use in a relatively large sample of 4th- through 12th-grade students ($n = 1,094$) and found that low- and moderately acculturated Hispanic Americans reported significantly higher 30-day and lifetime marijuana use than their highly acculturated counterparts.

Cultural Values

From what we gathered, only a handful of studies have conceptualized acculturation vis-à-vis cultural values. Most of these studies have found that cultural values such as familism play a protective role against illicit drug use. For example, Sommers, Fagan, and Baskin (1993) reported a significant negative relationship between familism and a composite score of illicit drug use. Ramirez et al. (2004) found a negative association between familism and lifetime marijuana use but not recent marijuana (30 days) or either lifetime or recent inhalant use. Soto et al. (2011) found that *respeto* was associated with a lower risk for lifetime marijuana use while familism was associated with an increased risk of marijuana use. In contrast to these findings, Unger, Ritt-Olson, et al. (2002) reported that they did not find a significant relationship between cultural values (i.e., familism, filial piety, and collectivism) and lifetime marijuana use, albeit they examined these relationships using a relatively small ($n = 211$) sample of Mexican American high school students.

Cultural Identifications

Studies that have employed ethnic identity as a means of assessing acculturation suggest protective effects against drug use. For example, Scheier, Botvin, Diaz, and Iffil-Williams (1997) examined the protective effects of ethnic identity using a longitudinal community sample of ethnically diverse seventh graders. This study posited that ethnic identity would buffer the effects of stress and protect youth in high-stress situations only. Their stress-coping hypotheses were confirmed, with ethnic minority youth at higher levels of stress and reporting lower levels of ethnic identity also reporting higher levels of marijuana use. Similarly, Brook, Whiteman, Balka, Win, and Gursen (1998) examined whether ethnic identity (i.e., cultural knowledge, group attachment, and identification) moderated the relationship between risk and drug use in a longitudinal study of Puerto Rican youth and young adults. These authors reported that ethnic identity offset the effect of risks (i.e., parental drug use, drug availability, peer drug use) on illicit drug use. Using a sample ($n = 1,892$) of Hispanic students from South Texas, Love et al. (2006) found ethnic identity was significantly associated with a decreased use of marijuana. Similarly, controlling for age and sex, Marsiglia et al. (2001) found ethnic pride was significantly and negatively related to recent marijuana use but not "hard" drug use. In contrast to these findings, Zamboanga et al. (2009) found that, after controlling for cultural practices, ethnic identity was positively associated with marijuana use. Schwartz et al. (2009) however found no evidence for direct or indirect (through conduct problems) effects between ethnic identity and illicit drug use (i.e., marijuana, cocaine, ecstasy, and methamphetamines) in a sample of high-risk Hispanic adolescents. Similarly, Unger et al. (2014) did not find a significant relationship between ethnic identity and initial levels or longitudinal change in marijuana use.

Findings from Studies Employing Bidimensional Models

Once again, over and above the methodological problems, the reliance on unidimensional measures of acculturation has been proposed to partially explain these inconsistent findings. Indeed, in contrast to studies emphasizing unidimensional approaches, results from a handful of bidimensional studies paint a very different picture. For instance, Unger et al. (2009) used a validated and more comprehensive measure of Hispanic and US cultural practices and reported that Hispanic orientation was associated with a lower risk of marijuana use (the relationship between US orientation and marijuana use was nonsignificant). Schwartz et al. (2011) found that a multi-indicator latent construct assessing Hispanic orientation (practices, identifications, and values) was negatively related to illicit drug use (latent variable measured by marijuana, hard drug, inhalant, injecting, and prescription drugs). Zamboanga et al. (2009) found no significant relationship between Hispanic and US orientation and lifetime marijuana use. Among drug users though, a Hispanic orientation was positively associated with the extent of marijuana use, while a US orientation was protective and associated with less drug use. Unger et al. (2014) examined trajectories of acculturation over time and found that Hispanic youth with lower initial levels of acculturation grew more rapidly in their reported levels of marijuana use over time. As a whole, these findings highlight that adoption of US cultural practices, identifications, and values does not increase a youth's vulnerability, but rather it is the loss of one's heritage practices, identification, and values that is associated with risk for drug use.

Mechanisms Underlying the Relationship Between Acculturation and Drug Use

Researchers have proposed at least three developmental mechanisms to account for the underlying developmental relationship between acculturation and drug use: (1) cultural stress, (2) family functioning, and (3) change in cognitive functioning related to drug use. Turning first to cultural stress, researchers have argued that it is not the acculturative experience, but rather the stress that stems from acculturation itself that is disruptive and disquieting, leading youth to experience a wide range of dysfunctional behaviors (e.g., Berry, 2006; Portes & Zhou, 1993; Vega, Zimmerman, Gil, Warheit, & Apospori, 1997). A second promising explanatory mechanism, family functioning, involves a gap between adolescents' and parents' acculturative experience that compromises family functioning (Szapocznik & Kurtines, 1993; Telzer, 2010). A third mechanism suggests that the linkage between acculturation and drug use is best understood through the changing climate of youths' friendships and exposure to new values, beliefs about the social

prevalence of drug use (i.e., mainstream US norms that are more liberal), and their anticipated benefits. This proposed mechanism does not negate a direct effect of acculturation (Marín, Perez-Stable, Marin, Sabogal, & Otero-Sabogal, 1990) but rather proposes an intermediate mechanism to account for youths' changing perspective on their heritage culture. We briefly discuss each of these mechanisms as they pertain to the discussion of acculturation and drug use.

Cultural Stress

The process of adapting to a new environment, dealing with perceived discrimination and feelings of marginalization, along with losing one's traditional support system, is disquieting to say the least. Since Stonequist (1937) first suggested that the process of acculturation could be inherently stressful, scholars have used terms such as "culture shock" (Oberg, 1960), "language shock" (Smalley, 1963), and "cultural stress" (Padilla, Olmedo, & Loya, 1982) to describe the psychological impact of acculturation. In developing this line of thinking, scholars have argued that the effects of acculturation on various developmental outcomes cannot truly be understood without taking into account the perceived stress associated with the acculturation process (Barnes, 1979). Indeed, Barnes has argued that the concomitant stress associated with acculturation, rather than acculturation per se, is responsible for deviant behavior and other health-compromising outcomes, including tobacco and illicit drug use.

Following this lead, several theoretical frameworks have been proposed to account for the process through which acculturation promulgates psychosocial stress. Three prominent examples include the stress, coping, and adaption theory (Berry, 2006), acculturation strain theory (Vega et al., 1997), and segmented assimilation theory (Portes & Zhou, 1993). Each theory posits somewhat different underlying mechanisms, albeit they share a common tenet, suggesting that stress results from conflict between different cultures and cultural conflict within one's own ethnic group. Cultural stress is a broad catchall and can include a variety of stressful experiences that arise from attempting to live in a bicultural context. Indicators of cultural stress include perceived discrimination (Sawyer, Major, Casad, Townsend, & Mendes, 2012), negative context of reception (Portes & Rumbaut, 2006), acculturative stress (Vega et al., 1997), and bicultural stress (Romero & Roberts, 2003).

As a whole, the literature has consistently found that indicators of cultural stress, including discrimination, acculturative stress, and context of reception, are linked to increased risk of substance use (e.g., Basáñez, Unger, Soto, Crano, Baezconde-Garbanati, 2013; Kam, Cleveland, & Hecht, 2010; Simpson & Barrett, 1991; Tran, Lee, & Burgess, 2010; Unger et al., 2014; Wiehe, Aalsma, Liu, & Fortenberry, 2010). Studies attempting to

flesh out these developmental relationships have in fact found that acculturation is linked with cultural stressors, which in turn increase the probability of health risk behaviors. For instance, using a cross-sectional sample, Zamboanga et al. (2009) found a Hispanic orientation was indirectly associated with greater marijuana use (among users) through acculturative stress. American orientation on the other hand was protective against marijuana use (among users) through acculturative stress. In their 6-year longitudinal study of Hispanic youth, Lorenzo-Blanco et al. (2013) reported that heritage-cultural values and perceived discrimination mediated the relationship between heritage and US endorsement of cultural practices and decreased levels of cigarette use.

Although these studies provide preliminary support for the role of cultural stress as a key mediator of the relationship between acculturation and drug use, it is possible that cultural stress may function as a moderator instead. Specifically, the effects of the pushes and pulls of acculturation may be contingent on the level of perceived cultural stress (or the level of coping skills). The acculturation process for youth experiencing greater cultural stress may lead to feelings of being overwhelmed. Alternatively, some have posited that acculturation may instead moderate the relationship between cultural stress and psychosocial functioning (Cook, Alegria, Lin, & Guo, 2009). Youth who acquire a US cultural orientation may be prone to experience the negative impacts of discrimination and living in an unwelcoming context of reception. On the other hand, those youth who retain and value their cultural heritage may be more prone to experience the negative impacts of cultural conflict within their own ethnic group. Indeed, Alamilla, Kim, and Lam (2010) found that high ratings for Anglo and Latino orientation served as a risk factor in relationship to discrimination. While the exact nature of the relationship between acculturation and cultural stress remains unclear, these findings highlight the need for incorporating cultural stress in future studies.

Family Functioning and the Parent–Child Acculturation Gap

Several researchers suggest that family functioning mediates the relationship between acculturation and various developmental outcomes (e.g., Portes & Rumbaut, 2001; Szapocznik & Kurtines, 1993). "Family functioning" is an umbrella term that can include parent–child communication, emotional warmth, monitoring, disclosure, and parent–child bonding (Scheier & Hansen, 2014). Differential acculturation theory (DAT) proposes that gaps between the adolescents' and parents' acculturation disrupts the basic emotional climate of the family. These cultural gaps emerge as adolescents' typically adopt US culture more rapidly than their parents, who try to retain their heritage culture (cf. Dinh & Nguyen, 2006; Martinez, 2006). Discrepancies between parent and child arise in part because school attendance encourages adoption of US cultural practices and beliefs along with adoption of predominantly White American norms (Padilla, 2006). In many

instances, Hispanic parents who are first-generation immigrants are more likely to find comfort with and settle into ethnic enclaves, where they can avoid having to relinquish their own cultural practices and adapt to the US culture (Schwartz, Pantin, Sullivan, Prado, & Szapocznik, 2006). Their children, however, attend schools where there are pressures to adopt different values and cultural beliefs. As youth distance themselves from their families and their conventional values, there is greater likelihood for dissonance in the home that, if not handled properly, produces turmoil and plants the seed for parent–child discord that may serve to propel youth "into the streets," where they bond with deviant peers increasing their opportunities to engage in and role model deviant behaviors (Telzer, 2010).

In this respect, DAT is consistent with the basic tenets of family interactional theory (FIT), a systems approach that suggests family dynamics are a driving force in the behavior of children. Specifically, FIT postulates that the social interactions among family members and their personalities, combined with parents' efforts to raise their children in prosocial, conventional, and law-abiding homes, help shape a child's developmental outcomes. During adolescence, the principal efforts of prosocial parents includes exercising judicious monitoring skills to know the whereabouts of their children, engage in democratic child-rearing strategies, and maintaining open lines of communication to express warmth and nurturance. Children that are raised in loving, warm, and emotionally nurturing homes with conventional parents will likely adopt these favorable roles themselves as they transition from adolescence to young adulthood (Brook et al., 2001). However, it is important to note that the child's own personality, behavior, and social context also inform their developmental outcome. Discrepancies between parent and child acculturation are likely to result in increased cultural stress and family conflict, disrupting the loving and emotionally nurturing homes essential for favorable development.

In support of the FIT framework, Szapocznik, Santisteban, Kurtines, Perez-Vidal, and Hervis (1984) have worked extensively with Hispanic (primarily Cuban) families in Miami, Florida, and reported that discrepancies between rates of acculturation contributes to feelings of marginalization and alienation in the home. Parents in these homes overreacted and imposed restrictions on their children, attempting to prohibit acculturation to the dominant society. While the motives underlying these parents' behaviors may originate out of concern for the child, in doing so, the parents succeeded in further alienating their children. This type of work with troubled families has led to further elaboration of the acculturation model. According to the revised bidimensional conceptualization of acculturation, family dysfunction/conflict emerges as part of a balancing act in which the child adopts US cultural practices, values, and identifications, while also losing traction with their heritage cultural practices, values, and identification. This is part of the "pushes" and "pulls" we elaborated on earlier that undermine family

dynamics in the home. When parents see their child as overly endorsing the cultural values, practices, and beliefs of US dominant culture, they may perceive certain behaviors and/or attitudes adopted by their children as a rejection of the "old" valued ways (Portes & Rumbaut, 2001). Where the child loses traction with heritage values, beliefs, and customs, the tenor of family interaction often shifts, making it hard for the child to communicate with their parent and reinforcing the cultural rifts that arise between them. This can mean movement away from using Spanish language in the home, failure to communicate openly with their parents, more secrecy and less disclosure, all factors that can disrupt emotional warmth in the home.

Recent studies provide a support for DAT. For example, Elder, Broyles, Brennan, Zúñiga de Nuncio, and Nader (2005) found that the more parent and child differed in their Hispanic orientation (measured by cultural practices) the more likely the youth was to use tobacco. Martinez (2006) found that a greater gap between parents' and youths' Americanism (measured by cultural practices) was associated with a greater likelihood of future youth cigarette use. The direct effect of acculturation was mediated by family stress and effective parenting practices, such that greater the difference in parent–child acculturation the greater the family stress resulting in a decrease in effective parenting, the latter associated with greater drug use. Unger et al. (2009) found parent–youth discrepancies in US and Hispanic cultural practices were both associated with recent (last 30 days) and lifetime cigarette and marijuana use. The relationship between US discrepancies was partially mediated by levels of family cohesion.

Using data from their two-site study (Miami and Los Angeles), Schwartz et al. (2012) calculated differential parent–youth scores on bidimensional indicators of cultural practices, values, and identification. The authors reported that gaps in US practices indirectly predicted cigarette use through adolescent reports of communication with parents. Extending this study, Schwartz et al. (2015) used latent growth curve modeling to evaluate the effects of change over time in parent–youth acculturation gaps in cultural practices, values, and identification on several measures of psychosocial functioning. While increasing magnitude of gaps in US values over time predicted greater family functioning, greater gaps in heritage values and identification over time were associated with a decline in family functioning. In turn, family functioning was associated with greater positive youth development and lower levels of depressive symptoms. No significant relationship was found between family functioning and cigarette use, however. While these studies provide support for a model positing the importance of acculturation gaps, it is important to note that not all studies have provided favorable evidence (e.g., Pasch et al., 2006; Ramírez García, Manogdo, & Cruz-Santiago, 2010). As such, it is important for future studies to further explore the role of acculturation gaps between adolescents and their caregivers and youth adaptation.

Attitudes, Social Norms, and Intentions

Some portion of the relationship between acculturation and negative outcomes may be accounted for by social-cognitive mechanisms that influence development (e.g., Kam, Matsunaga, Hecht, & Ndiaye, 2009; Lorenzo-Blanco et al., 2013; Marín et al., 1990). Indeed, as previously stated, one of the primary theoretical assumptions linking acculturation and drug use is that more acculturated adolescents tend to internalize the norms of the mainstream US adolescent culture. The theory of reasoned action (TRA; Ajzen & Fishbein, 1980) and its subsequent refinement embodied in the theory of planned behavior (TPB; Ajzen, 1991) posit several means through which social-psychological processes can influence incorporation of mainstream culture. Specifically, TPB proposes that attitudes toward drug use (i.e., whether drug use is valued as pleasant or good), subjective norms (i.e., perceptions of what others believe individuals ought to do), and perceived behavioral control (i.e., mastery and self-efficacy) motivate behavior indirectly through intentions to engage in drug use. In both the TRA and TBP frameworks, beliefs and attitudes are malleable factors that drive intentions, which are the more proximal event that encourage youth to engage in health-compromising behaviors like drug use. The efficacy component of TBP maps well to Bandura's (1986) notion of performance mastery, suggesting that behavior is also a product of "believing" one has the necessary skills to execute behavior (i.e., skills necessary to smoke cigarettes). In this framework, the success of health behavior interventions rests on their ability to reshape youths' attitudes and beliefs toward drug use, while at the same time teaching youth requisite skills to ward off negative social influences to use drugs.

Findings from cross-sectional studies suggest that social-cognitive mechanisms, like those outlined previously, mediate the association between acculturation and cigarette use among Hispanic youth. For instance, Unger et al. (2000) found acculturated adolescents, defined by English preference, viewed cigarettes as having less positive consequences than less acculturated adolescents. Carvajal, Photiades, Evans, and Nash (1997) found that a measure of social interactions with non-Hispanic peers (a unidimensional measure of cultural practices) was negatively related to "negative attitudes toward smoking cigarettes." Regarding subjective norms, Morgan-Lopez Castro, Chassin, and MacKinnon (2003) found that adherence to Hispanic cultural norms served a protective function and was associated with less cigarette use (i.e., lifetime, recent cigarette use, and smoking more than 100 cigarettes in a life time), with the bulk of this statistical association mediated through avoidance self-efficacy. Similarly, Epstein, Doyle, and Botvin (2003) found that the relationship between linguistic acculturation and a composite measure of multiple drug use was mediated through peer drinking and polydrug use norms. Castro et al. (2009) found that a measure of cultural values (preference for English media) was negatively associated with several motives for cigarette use while ethnic identity and

family values were positively associated with avoidance self-efficacy, which in turn negatively predicted cigarette use.

Building on these and related findings, Kam et al. (2009) have suggested that measures of social norms be further refined to include *injunctive norms* (conduct that important others deem acceptable), *descriptive norms* (conduct that others seem to engage in), and *personal norms* (conduct that individuals think is appropriate). This approach is in keeping with norm focus theory (NFT; Reno, Cialdini, & Kallgren, 1993), which posits a strong regulatory role of perceived social acceptability by significant authority and adults as instigators of behavior. After further dividing injunctive norms into *peer* and *family* injunctive norms, Kam and colleagues found empirical support for this extended model in a longitudinal study of Mexican and Mexican American adolescents. Specifically, peer and family injunctive but not descriptive norms, were associated with positive drug attitudes, perceived control, and personal antidrug norms, which in turn were associated with intentions to use drugs at Wave 2 and subsequent use at Wave 3. Multigroup comparisons indicated that the basic model was similar for all youths, irrespective of their country of origin. Whether other aspects of acculturation play a stronger role in the mediating chain remains an empirical question that must be addressed by future research.

Gender as a Moderator of the Relationship Between Acculturation and Drug Use

Several studies have found the relationship between acculturation and cigarette/illicit drug use is qualified by gender. For example, Deosaransingh et al. (1995) employed a unidimensional model of acculturation and found a positive relationship between language acculturation and cigarette use for adolescent girls, but not for boys. Using a relatively large sample (n = 1,295) of Hispanic sixth and seventh graders from New York City, Epstein et al. (1998) found that highly acculturated Hispanic adolescent girls smoked more frequently than their less acculturated counterparts; however the same relationship was not observed for adolescent boys. Similarly, in a large sample (n = 2,441) of Hispanic adolescents, McQueen, Getz, and Bray (2003) found English language use was directly related to marijuana use among adolescent girls, but the same effect was not observed for boys. Kulis, Marsiglia, Kopak, Olmsted, and Crossman (2012) found that ethnic identity was protective and associated with lower levels of recent cigarette and illicit drug use for boys, but not for girls. These findings have been recently extended to studies using a bidimensional conceptualization of acculturation. Using measures of cultural practices, values, and identifications, Schwartz et al. (2014a) found collectivist values were risk-enhancing for cigarette smoking among boys but protective for girls.

At various levels, Hispanic culture typically embraces more traditional gender roles (Zayas, Lester, Cabassa, & Fortuna, 2005). Specifically, females are held to a gender schema known as marianismo, whereby they are expected to be caring, nurturing, and self-sacrificing, while males are expected to protect and provide financial support to their families (Castillo, Perez, Castillo, & Ghosheh, 2010). In addition, cultural values among Hispanics place greater emphasis on parental concern, control, and monitoring for Hispanic daughters than for sons (Azmitia & Brown, 2002). As a result, Hispanic girls may acculturate to traditional family practices more readily than boys. The result is that embracing the freedom that comes with less traditional gendered roles may create opportunities for adoption of the dominant cultural practices and as a result strain family relationships (Zayas et al., 2005). In support of this, Lorenzo-Blanco et al. (2013) found cultural values were more strongly associated with family functioning in Hispanic girls than in boys. Explaining their findings, Lorenzo-Blanco et al. (2013) proposed that girls who embrace higher heritage values may experience greater guilt when family harmony is at risk, leading them to focus more on family problems. Alternatively, it is conceivable that girls with less emphasis on heritage values are more likely to rebel against parental control, causing family conflict and disharmony.

It should be noted however that findings that suggest the loss of heritage culture is risk engendering for girls have not been entirely consistent. For example, Smith, McGraw, and Carrillo (1991) found that acculturation was positively associated with cigarette smoking for Puerto Rican boys, but the same risk-engendering effect was not obtained for girls. Lorenzo-Blanco et al. (2011) found that ethnic identity was positively associated with recent cigarette use among girls but not among boys, the exact opposite pattern of findings reported by Kulis et al. (2012). Soto et al. (2011) found no evidence of gender-specific effects when they examined relationships between cultural values and lifetime cigarette/marijuana use. As a whole, while some of these findings support the assumption that the acculturation process may be subject to gender socialization influences that occur within Hispanic families (Valenzuela, 1999), they are by no means conclusive. More studies are necessary to further explore these gender differences and shed light as to the precise reasons some effects appear to hold for girls but not boys.

The Way Forward: Addressing Gaps and Methodological Concerns in the Field of Acculturation

In this final section, we place the compilation of findings reported above into context, relying on several new developments in the field (both theoretical and empirical). We begin with a discussion of family socialization and how cultural values may be transmitted. This is followed by a brief discussion of whether researchers can "parse" cultural stress from acculturation, given the tightly wound nature of these developmental processes. Finally, we address several methodological shortcomings that run beneath the discussion of acculturation and drug use, using these arguments to address the inconsistent findings presented in this chapter.

Need for Family Studies

In the past decade, both sociologists and psychologists have clarified the specific ways in which parents encourage children to gravitate toward specific aspects of their cultural heritage and to avoid specific aspects of the receiving cultural context (Portes & Rumbaut, 2006). Umaña-Taylor, Bhanot, and Shin (2006) referred to this phenomenon as *familial ethnic socialization*. Several studies have found that the presence of heritage culture in the home increases the likelihood that children and adolescents will retain or adopt their heritage culture (Schwartz, Zamboanga, Rodriguez, & Wang, 2007; Umaña-Taylor et al., 2006). Regarding acquisition/rejection of American culture, however, there is evidence that caregivers' socialization attempts are less effective in shaping youths' US cultural adoption (Schwartz, Zamboanga, Rodriguez, & Wang, 2007). In this instance, peers, school, and media may play a greater role in shaping US cultural adoption than youths' primary caregivers. Above and beyond the direct role caregivers may have in shaping their child's acculturation process, Szapocznik and Kurtines (1993) and Portes and Rumbaut (2006) have specifically highlighted that parent–child gaps in acculturation can affect family processes, cultural stress, and mental health outcomes. Consistent with the FIT (Brook et al., 2001) presented earlier and developmental systems theory (Lerner & Castellino, 2002), a critical step for future research requires conceptualizing the family as a holistic interacting and constantly evolving system. This requires taking into account the personality, psychosocial functioning, and ongoing acculturation processes in the youths' caregivers as well as taking into account the various contextual levels in which both agents (youth and their caregivers) are embedded (e.g., peer networks, school system, work, etc.).

Disentangling Key Stressors and Acculturation

As mentioned earlier, a long tradition of researchers have highlighted the need for incorporating cultural stress into studies examining the relationships between acculturation and drug use. Indeed, some researchers have suggested that it is the stress associated with acculturation, rather than acculturation per se, that contributes to deviant and health-compromising behaviors (Barnes, 1979). Consistent with the stress-coping literature, vulnerability is a reflection of the inability to confront stress with appropriate internal (problem-solving and decision-making skills) and external (instrumental and emotional support) resources. Because of inadequate cognitive (belief in efficacy) or instrumental resources (people I can turn to), stress is perceived as overwhelming, creating a sense of "learned helplessness" if not despair (e.g., Cohen & Wills, 1985; Lazarus & Folkman, 1984; Wills, Mariani, & Filer, 1996). When faced with stress, and feeling they lack the appropriate resources, the individual "freezes" and fails to act or select optimal ways to approach the situation. This engenders a sense of hopelessness, which can impede normal development. Families that are faced with continued sources of stress from poor acculturation often experience discord, which for the child can inhibit school progress (parents are unlikely to seek a teacher's assistance, attend family conferences, or consult with school officials over language or acculturation problems). Children from families with high levels of acculturative stress experience deficits in school performance; have limited resources for seeking help with homework and are often faced with competing economic challenges to provide food and other resources for their family.

From this we can gather that a critical first step to developing a comprehensive model that articulates the relationships between acculturation and drug use is to separate the "process of acculturation" from the underlying "process of cultural stress" (Gilbert & Cervantes, 1987). In other words, we need to find ways to distinguish the process of acculturation from the experience of stress and determine whether both contribute independently or interdependently to maladaptive outcomes in Hispanic youth. Related to this is the need to identify whether cultural stress mediates or moderates the relationship between acculturation and drug use and/or whether acculturation moderates the relationship between cultural stress and drug use. In addition, it is important to note that studies to date have neither sought to determine whether culturally specific stress is unique from other forms of stress (e.g., normative developmental and family-economic stress), nor have they attempted to disentangle the effects of these various stressors on various forms of psychosocial functioning, including drug use. This is a critical step for future research, as this information is necessary to evaluate the relative contributions that cultural stress and other stressors (including but not limited to normative stress [i.e., family and peer conflict], family-economic stress [i.e., stress that originates from lacking

necessary financial resources], and perceived neighborhood danger), in conjuncture with the process of have acculturation (as a mediator or moderator), have on youth adaptation.

Methodological Concerns

Understanding Effects of the Receiving Context

Over and above these future directions, it is important for the acculturation literature to acknowledge methodological shortcomings that hinder our understanding of the relationship between acculturation and drug use. To begin with, our review and comparison of several studies conducted around the United States makes a theoretical assumption that each context of reception is equally welcoming and inviting. However, research has found that may not be the case (Schwartz et al., 2014b, p. 2). Indeed, research has indicated youths' perception of their context as either positive or negative in terms of how well they are welcomed and received seems to play an instrumental role in the degree to which individuals experience acculturative stress (Smokowski & Bacallao, 2011). While immigrants who perceive a negative context of reception are likely to feel isolated, encounter difficulty finding jobs, and experience discrimination or perceive hostility, those who perceive a more positive context of reception can use this as a springboard to succeed and achieve the "American Dream" (Schwartz et al., 2014b). Thus, immigration and acculturation can be conceptualized as the interaction between a specific immigrant group and the perceived context in which they are received (Schwartz et al., 2010). Given the high level of variability across receiving contexts in the United States, until we have a better understanding of the impact that an immigrants' perception of their context of reception has on acculturation, cultural stress, and psychosocial functioning, as well as an adequate understanding of various contexts of receptions immigrants may settle in, it will be difficult to effectively compare studies and generalize findings. Thus, it is important for research to examine acculturation processes across different communities with common assessment protocols that query the perceived context of reception.

Within-Group Diversity

There is also a high level of within-group diversity when it comes to examining acculturation (Umaña-Taylor, Diversi, & Fine, 2002). This is especially true for Hispanics, who vary not just in terms of national origin but also in socioeconomic status, culture, dialect, history with the United States, skin tone, and ability to fit into mainstream US society, as well as many other factors (Ennis et al., 2011). Inconsistent findings across studies may reflect a lack of consideration of important within-group differences. When studying Hispanic/Latino populations, the specific nationality of group members is important for many reasons. To begin with, there are vast differences in histories

concerning immigration into the United States, as well as demographic differences that exist across nationalities. These factors can result in very different immigrant experiences that may influence the acculturation process with trickle down effects on stress (i.e., perceived discrimination) and, eventually, psychosocial functioning.

Our review indicated no single study to date had evaluated within-group differences in the prevalence of tobacco and illicit "hard" drug use among Hispanic adolescents. A few studies however have observed significant differences in mixed Hispanic adolescent and adult samples. For example, Wagner-Echeagaray, Schütz, Chilcoat, and Anthony (1994) reported a positive relationship between acculturation and lifetime crack smoking among Mexican Americans but not among "other Hispanics" in a mixed sample of Hispanic adolescents and adults. On the other hand, a study conducted by Ortega, Rosenheck, Alegria, and Desai (2000) with a mixed sample of adolescents and adults found acculturated Puerto Ricans were at greatest risk for being diagnosed with a substance abuse disorder. While evaluating differences in prevalence rates for cigarette and tobacco use serves as an important first step to account for differing patterns of risk, it is critical for future studies to replicate these findings in order to further evaluate whether there are significant differences in the relationship between acculturation and drug use between immigrant groups.

Need for Large-Scale Epidemiological Longitudinal Studies

Perhaps two of the most consistent differences in the body of work we reviewed pertain to study design (cross-sectional versus longitudinal) and the composition of samples (data obtained from a community sample versus a nationally representative sample). The different study designs and varied sample compositions in some cases make comparisons across findings at best tenuous. Cross-sectional studies suffer from the inability to assert cause-and-effect relationships (with appropriate statistical controls and temporal precedence), and community samples are highly specialized (if not small relative to national studies). This leaves us with a very impoverished view of acculturation as it influences cigarette/tobacco and drug use in Hispanic youth. Indeed, much of what we know about acculturation and drug use among Hispanic youth is garnered from disparate individual studies, conducted in diverse parts of the country, using very different study designs, heterogeneous samples, and poorly validated measures. To date, only a handful of large-scale studies exist that have assessed acculturation and "cultural differences" among youth. These include the Hispanic Health and Nutrition Survey (HHANES), the National Household Survey on Drug Abuse (NHSDA), the Epidemiology Catchment Area Study (ECA), the National Latino and Asian American Survey (NLAAS), and the Population Assessment of Tobacco and Health (PATH). However, these studies have relied on unidimensional markers of acculturation, such as nativity (Corral & Landrine, 2008), years spent in the United States (Alegría et al., 2007), and language use (Allen et al.,

2008; Caetano, Ramisetty-Mikler, Wallisch, McGrath, & Spence, 2008). As a whole, this suggests the need to conduct large-scale national surveys using common and well-validated metrics and engage in prospective, longitudinal research with a goal of asserting causal mechanisms from studying change over time.

Measuring Substance Use

In addition to design and sample considerations, there are measurement concerns that may detract from this body of literature. We have already discussed the problematic use of differing measurement approaches and the concerns associated with assessing acculturation. In addition to these shortcomings, many studies involved highly specialized ways to model drug use or obscured whether the focus was on initial stages of use in comparison to more protracted use. Evidence supporting relationships between acculturation and drug use often relies on dichotomous measures of drug use (Zamboanga et al., 2009), using "yes/no" coding procedures. The use of dichotomous coding (for lifetime and current use) presents a very limited view of variability in consumption, and often obscures important developmental mechanisms. Lifetime patterns of consumption can vary considerably depending on many factors (i.e., how much stress is experienced and at what point in the life cycle). Not knowing whether the researcher is studying the early stages of drug use (other than by using age as proxy), experimental use, or more problematic use also hides important trends that could inform prevention. Unfortunately, only a handful of studies in our review differentiated between any of these different stages (i.e., Kaplan et al., 2001; Love et al., 2006; Zamboanga et al., 2009). There has also been a dearth of studies examining the role of acculturation on more serious drug use, including stages that involve diagnostically valid classifications of abuse and dependence. Additionally, studies will need to focus on the role of acculturation on newer emerging substances (e.g., electronic cigarettes, synthetic drugs, opioids, etc.), which may differ from other drugs in terms of ethnic and socioeconomic patterns of use.

Building on this point, we also have very limited knowledge on why acculturation has different influences on different drug types. This lack of specificity may arise because so many studies involved "composite scores" that bundled variances for several drug use items in order to avoid the pitfalls of encountering statistical estimation problems with nonnormal measures. Not enough youth report using certain illicit drugs, and the youth that do report use of these drugs are placed together in a single catchall assigned "1" for use. The extent of their drug use is lost to further analysis once researchers combine different drug types into a single index of drug use. This data transformation argues that we need age-specific models of drug use, capturing its more primitive stages and then modeling drug use further up the gateway sequence for older youth. Thus, studies of acculturation in younger age samples would focus on alcohol, cigarettes, and marijuana

to maximize model estimation techniques, whereas studies of pills, inhalants, psychedelics, cocaine, and heroin (as well as synthetic drugs) would be a focus in studies of older youths (ages 15–24). Alternatively, researchers could also focus on higher-risk youth (such as those attending alternative schools, youth who are homeless or youth sentenced to juvenile hall) where engagement in specific illicit drug use may be more prevalent.

Conclusion

Our review of the literature suggests that losing one's heritage practices, values, and identifications is more detrimental toward cigarette and illicit drug use than adopting US cultural practices, values, and identification. However, the scarcity of empirical studies, coupled with several conceptual and methodological problems, hampers our understanding of the developmental processes linking acculturation with cigarette/ tobacco and illicit drug use. Indeed, this review was intended to serve as a steppingstone so that future studies may address these prevailing challenges. Echoing the conceptualization of acculturation proposed by Schwartz et al. (2010), future studies may want to conceptualize acculturation as both a bidimensional and multicomponent construct. In addition, future research should work to contextualize acculturation within the child as well as within the family system (i.e., take into account caregivers' acculturation and the caregiver–child acculturation gap), separate the acculturation process from cultural stress and other normative stressors, further evaluate the effect of acculturation on social-cognitive mechanisms, identify potential within-group differences, employ multisite and large epidemiological longitudinal research, differentiate between the initiation and frequency of substance use, and seek to examine differences across various substances. Finally, future studies also need to shed light on the precise socializing mechanisms that contribute to gender differences. While there is considerable work to be done, we hope that the present chapter will serve to stimulate innovative and informative work that further illuminates the relationship between acculturation and cigarette and illicit drug use.

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Notes:

([1]) Our search parameter revealed 61 articles in PsychInfo and 108 in PubMed, however, 24 articles appeared in both searches.

([2]) Our review of PsychInfo and PubMed using the terms "Acculturation," "Hispanic OR Latino OR Latin," "Adolescent OR Youth," and "llicit drug OR marijuana OR cocaine OR heroin" turned up 34 and 46 articles respectively, 51 after accounting for replicated studies. Of these, 29 peer-reviewed manuscripts were relevant to our review.

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