Structure of Acculturation Attitudes and their Relationships with Personality and Psychological Adaptation: A Study with Immigrant and National Samples in Germany

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Abstract

This contribution deals with the structure of acculturation attitudes and their relationship with personality dimensions and psychological adaptation. Based on two German samples—an immigrant and a national one—evidence suggests that four independent factors are underlying acculturation styles as assessed with the Acculturation Attitudes Styles (AAS). Integration, Assimilation, Separation, and Marginalization are independent, lowly correlated constructs and represent distinct modes of coping with acculturation demands. Analyses also demonstrate that each acculturation factor shows a specific pattern of personality characteristics, including basic temperament dimensions, cognitive styles, coping, and components of emotional intelligence. Finally, the four acculturation styles can predict psychological adaptation such as wellbeing, happiness, etc. Integration is the most adaptive acculturation strategy, whereas Separation and Marginalization most strongly predict negative outcomes.

The field of acculturation research has developed rapidly in the past decade (Sam & Berry, 2006). This field seeks to comprehend how immigrants acculturate following migration, and how well they adapt to their new society. Of particular importance is the question: if there are variations in how immigrants acculturate, and in how well they adapt, is it possible to discover relationships between these two variables, in order to identify which ways of acculturating are associated with more positive outcomes?

One way to assess how immigrants seek to acculturate (i.e., their acculturation attitudes) is to employ a measure with a fourfold structure, assessing preferences for Integration, Assimilation, Separation, and Marginalization. These four ways of acculturating are based on the intersection of two underlying issues facing acculturating individuals and groups: to what extent do they wish to maintain their heritage cultures and identities; and to what extent do they wish to have interactions with others in the larger society outside their own group.

An international study of immigrant youth (Berry, Phinney, Sam, & Vedder, 2006) used an instrument that assessed these four acculturation attitudes. This study was able to show that these four attitudes could be combined with other acculturation variables (such as cultural identities, friends, and language use) to form a broader variable, which was termed acculturation strategies. These four strategies were related to the psychological and sociocultural adaptation of immigrants: those who engaged the Integration way (i.e., were able to involve themselves in both their heritage cultures and in the national society) adapted better than those who engaged the other ways of acculturating, especially Marginalization. Although there is empirical evidence to demonstrate the independence of the two issues underlying these acculturation strategies (e.g., Ryder, Alden, & Paulus, 2000; Sabatier & Berry, 2008), the existence of four independent acculturation attitudes has been queried by some other researchers (e.g., Chirkov, 2009). To our knowledge, there is little empirical evidence that the four postulated acculturation strategy dimensions can be considered as independent factors. The first purpose of our study is to seek evidence for the existence of four independent factors underlying the four acculturation attitudes. We postulated in accordance with the model that four factors should emerge. Second, we assess the role of some personality variables that may provide insight into the psychological meaning of these attitudes. And third, using these four attitudes and their links to personality, we seek to extend our understanding of the relationships between how individuals acculturate and how well they adapt.

This study addresses these three central issues using two samples in Germany: an immigrant sample and a national one. We first examine the psychometric properties of the four Acculturation Attitudes Scales (including Exploratory Factor Analyses and reliabilities of the scales); then we investigate the latent structure of data matrix (applying Confirmatory Analyses), with several models postulating different numbers of latent factors being tested; and then we seek to link the identified factors to some features of personality and to the psychological adaptation of immigrants. We postulated that each acculturation factor should show a different pattern of personality characteristics. The Acculturation Attitudes Scale was originally construed to measure acculturation attitude with migrants; in our studies we also assessed data with members of the mainstream society, German, which had contact with migrants living in Germany. We were interested to get knowledge about their beliefs regarding acculturation, referred to as acculturation expectations (Berry, 1997). We expected a similar factor structure as we would discover with the migrant samples.

Assessment of Acculturation Attitudes

How to asses acculturation attitudes has been a question of some importance. As noted above, these attitudes are rooted in individuals' preferences on two underlying issues: the extent to which they wish to maintain their heritage cultures and identities, and the extent to which they wish to have contact with those outside their own group and to participate in the daily life of the larger society. When these two issues intersect, four acculturation attitudes are produced: *Integration, Assimilation, Separation, and Marginalization*. Initially, (e.g., Berry, 1970; Berry et al,

1986) each of the four attitudes was assessed independently. Later assessment (e.g., Dona & Berry, 1994; Sabatier & Berry, 2008) examined preferences on the two underlying dimensions. Recently, discussions of these two approaches (e.g., Arends-Toth & van de Vijver, 2006) have appeared, in which some questions about the psychometric properties of both approaches have been raised. For the four statement approach, the issue has been whether factor analysis would reveal four independent factors (one each for the four attitudes) or two independent factors (one each for the two underlying dimensions).

Links between Acculturation Attitudes and Personality

Previous research has shown that there are important relationships between acculturation attitudes and various aspects of personality (Schmitz, 1992, 2001, 2003, 2004; Ward & Kennedy, 1994; Ward, Leong, & Low, 2004). The main findings have been as follows.

Integration

Persons preferring Integration, compared with those scoring low on Integration, are emotionally more stable; they are more sociable and agreeable, less impulsive, and show a higher degree of Sensation Seeking, more Open-Mindedness and Activity. Obviously, they feel safer and they are more interested in exploring new situations. They are flexible enough to modify their strategies if it becomes obvious that the strategies are not going to lead to success.

Assimilation

Those seeking Assimilation show a higher degree of Neuroticism and Anxiety, but they are agreeable (sociable), friendly, and less aggressive. The high degree of Activity helps them make an effort to assimilate to the new culture they are confronted with. Their sociable and friendly attitudes facilitate coming into contact with members of the larger national society, communicating with them, and joining in their activities.

Separation

Among migrants choosing Separation as an acculturation strategy, there is also a higher degree of Neuroticism, including its defining components such as Emotionality, Anxiety, and lack of self-assurance and feelings of self-esteem. As they are less active and frequently less sociable and agreeable, they often find it difficult to deal effectively with people of the larger national society as well as with other sociocultural groups. The high degree of Closed Mindedness (the polar contrast of the Openness dimension) makes it more difficult for them to modify their beliefs and behavior systems.

Marginalization

Persons preferring Marginalization show a high degree of Unsocialized Impulsive Sensation Seeking; further there is a higher degree of Neuroticism, Aggressiveness, and a lack of interpersonal trust and Open-Mindedness.

Relation between Acculturation and Coping

Schmitz (2003, p. 37) has argued that "acculturation strategies are closely related to coping strategies which are constitutive elements of the stress-and coping-paradigm and which are influenced by personality and situational variables." Empirical data with immigrants confirmed this assumption: each acculturation attitude was related to a different pattern of general coping styles (Schmitz, 2001). Immigrants are confronted with a variety of problems, such as maintenance or change of their own cultural identity, challenged by partly different systems of values, beliefs, customs, and issues in daily life; in some cases these are experienced as stressful. They have to develop coping strategies to deal with these stressful daily life hassles. It can be assumed that acculturation strategies are closely related to general coping styles, that they can be considered as specific patterns of coping behavior that are applied in situations of acculturative stress. In the literature relating to coping theories and research (Zeidner & Endler,

1996), three types of coping are distinguished: task orientation, emotion orientation, and avoidance orientation. It may be assumed that task orientation should be found with immigrants preferring Integration and Assimilation, as these persons attempt to deal actively with demands of their social environment. The emotion orientation serves more to regulate their own emotions rather than to actively and constructively resolve problems they are confronted with. The emotion orientation should be negatively correlated with Integration, but positively with Separation/Segregation and Marginalization; this is because acculturation strategies frequently show close relationships with the expression of negative feelings towards the larger national society and other ethnic groups (cf. Schmitz, 2004). The avoidance orientation should be observed with persons preferring Separation and Marginalization, since persons of both groups are less interested in contact with the larger society. Persons preferring Separation avoid contact with the national society, but look for social support within their own ethnic group. Persons favoring Marginalization as well as not being interested in close contact with the larger society and with their own ethnic group, frequently choose a coping strategy called distraction, which is a subtype of avoidance behavior that includes distracting activities, such as gambling, alcohol and drugs, etc. Schmitz (1992) presented data that confirm these assumptions regarding the relationship between acculturation strategies and coping styles.

Links between Acculturation Attitudes and Adaptation

A common finding (reviewed by Berry, 1997; and Berry & Sam, 1997) is that those pursuing an Integration strategy (that is, having positive attitudes towards both maintaining their heritage cultures and participating with others in the larger society) generally have better psychological adaptation. Those having a preference for Marginalization have the poorest adaptation, with those preferring Assimilation or Separation generally falling in between. This pattern was largely confirmed in an extensive international study of immigrant youth (Berry et al, 2006). Such poor psychological adaptation has been referred to as *acculturative stress* (Berry, 1970; 2006; Berry & Annis, 1974).

In Germany, Schmitz (2001) reported that the degree of acculturative stress experienced by immigrants and their acculturation attitudes determine the individual's well-being and health-related behavior. Immigrants may experience acculturative stress over a long time period which can lead to major psychological disturbances (Schmitz, 2003). Schmitz (2003) investigated a sample of immigrants who had experienced a high degree of acculturative stress. He found relationships between acculturation attitudes and measures of psychopathology [assessed by the DAPP-BQ Dimensional Assessment of Personality Pathology – Basic Questionnaire; Livesley, Jackson, & Schroeder (1989)]: Integration was mostly negatively correlated with psychopathology, while Separation and Marginalization were positively correlated; Assimilation showed some positive and some negative correlations.

Aims of This Study and Hypotheses

The aim of the present study was twofold. First, the factorial structure of acculturation attitudes as assessed with the AAS was investigated. Second, the pattern of relationships of AAS acculturation styles with personality dimensions and psychological adaptation was examined. Our predictions can be summarized as follows.

Hypotheses 1

The Acculturation Attitudes Scales assess four different preferences for how to acculturate, namely *Integration*, *Separation/Segregation*, *Assimilation*, and *Marginalization*. As the four ways can be considered qualitatively different (Berry, 1970; Berry et al, 1986), the instrument was predicted to possess a four-factorial structure. This should be the case for both, acculturation attitudes of immigrant groups as well as acculturation expectations of members of the host society. Therefore, comparable four-factorial structures of acculturation styles should be found in both groups.

Hypothesis 2

Acculturation attitudes were predicted to correlate with personality dimensions. The latter can be considered as broad classes of behavior in general and of social behavior and attitudes in particular. Therefore, correlations with acculturation attitudes are straightforward and were predicted in line with previous research findings (e.g., Schmitz 1992, 2001, 2003, 2004). Particularly, it was expected that each acculturation style can be characterized by a differential pattern of relationships.

Hypothesis 3

Psychological adaptation (wellbeing) can be predicted by the four acculturation attitudes in the immigrant samples. Specifically, it was predicted that those engaged in Integration would adapt better than those engaged in Marginalization, with the other two ways of acculturating falling in between.

Methods

Procedure

The data analyzed in the present paper were originally collected as part of three different studies conducted between 1998 and 2005. Each study consisted of a battery of standardized questionnaires, focusing on acculturation attitudes and related issues. Approximately half of the total dataset comprises of immigrants with different cultural origins. In most cases, immigrant participants were contacted and interviewed by persons of their own ethnic group. Additionally, data were collected with a comparable number of German participants to serve as a comparison sample.

In all three studies, acculturation attitudes were assessed with the Acculturation Attitude Scales (AAS, see below). Additionally, a number of other instruments were employed in line with the purpose of investigation. In the next section, first, all instruments analyzed in the present paper will be described. Then more detailed information will be supplied regarding characteristics of the samples and which instruments were employed in each study.

Materials

Acculturation attitudes were assessed with the Acculturation Attitude Scales (AAS), which were originally developed as a measurement instrument in the *International Comparative Study of Ethnocultural Youth* (Berry, Phinney, Sam, & Vedder, 2006). The AAS comprises of four scales: Integration, Separation/Segregation, Assimilation, and Marginalization. Each scale is made up of six items that refer to six domains of cultural experience and identity in everyday life, including use of language, marriage, traditional customs, social activities, choice of friends, and music preference. For immigrants, the AAS assesses how they *prefer* to acculturate. For German members of the national society, the scale assesses how they think or expect that immigrants *should* acculturate.

Personality measures. Basic dimensions of personality were assessed with the German version of the *Zuckerman- Kuhlman Personality Questionnaire (ZKPQ;* Schmitz, 2004; Zuckerman, 2008*).* The questionnaire consists of five scales, Impulsive Sensation Seeking (ImpSS) with its two subscales Impulsivity (IMP) and Sensation Seeking (SS), Sociability (SY), Neuroticism-Anxiety (NANX), Aggression-Hostility (AGHO), and Activity (ACT). Additionally, there is an Infrequency Scale that may help to identify and measure response sets. From a psychometric perspective, Zuckerman's scales (sometimes referred to as "Alternative Five") have the advantage of being strictly orthogonal (Schmitz, 2004; Zuckerman, 2008), being clearly related to Eysenck's "Giant Three," and they can be also related to Costa and McCrae's "Big Five." But with its clear focus on genetically and biologically routed temperament dimension, the ZKPQ does not asses more cognitive aspects of personality, like the "Openness to Experience" factor in Costa and McCrae's model, which may be relevant in the context of cultural experience. So we included Rokeach's concept of Open-Mindedness which was assessed with an 18-items short

version of the Dogmatism Scale (Rokeach, 1960). Open-Mindedness vs. Closed-Mindedness was defined by "the need for a cognitive framework to know and to understand" (Rokeach, 1960, p. 67), as well as the capacity to break up one's own belief system and to integrate new information from the outside.

Emotional intelligence. As a comparatively novel construct in this area of research, we included a measure of trait-emotional intelligence. Emotional intelligence was shown to be important in social interactions (e.g., Mavroveli, Petrides, Rieffe, & Bakker, 2007) as well as in the perception and regulation of emotions (e.g., Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). Both aspects seem to be important for successful acculturation. We employed the German adaptation of the Trait Meta-Mood Scale 24 (TMMS-24; Salovey et al, 1995; Extremera & Fernández Berrocal, 2005). This scale contains three subscales: emotional attention (towards one's own emotions and the emotions of other persons); clarity (in the perception of one's own emotions and the emotions of others); and repair (capacity to interrupt negative emotions, to promote positive emotions).

Coping styles. Coping styles were assessed by the German version of the Coping Inventory for Stressful Situations (CISS) developed by Endler & Parker (1990, 1992). The CISS consists of three subscales: (1) task orientation; (2) emotion orientation; and (3) avoidance orientation. The Avoidance Scale includes two further subscales: social diversion and distraction. According to Endler and Parker (1990), task orientation describes purposeful task-oriented efforts aimed at solving the problem, cognitively restructuring the problem, or attempts to alter the situation. Emotion orientation refers to emotional reactions that are self-oriented aiming to reduce stress that is not always successful, and avoidance orientation describes activities and cognitive changes aimed at avoiding the stressful situation what can occur via distracting oneself with other situations or tasks or via social diversion (looking for social support) as means of alleviating stress.

Psychological adaptation. Three instruments were used to capture aspects of psychological adaptation, including the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985; German version made available by E. Diener), the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999 [German adaptation by Schmitz & Schmitz, 2004]), and – as an inverse marker of wellbeing – the Beck Depression Inventory (BDI; Beck, Steer, & Garbin, 1988; German adaptation by Hautzinger, Bailer, Worall, & Keller, 1995).

Samples

Approximately half of the total dataset (N = 1799) analyzed in the present paper comprises of immigrants (N = 905) with different cultural origins, who live in Germany at the time of data collection, and a comparable number of German participants (N = 894). Most immigrant participants were young adults recruited at professional schools, high schools, or universities. On average they had lived in Germany for 10 years and were familiar with the German language. Data were collected in three studies; their sample characteristics will be described below.

Study 1. A total of N = 534 immigrants participated in this study (250 males, 284 females; age 15-31, age average 21; 4). Their countries of origin were the Balkans (25), Turkey/Kurdistan (117), Western Countries of the European Union (81), Eastern Europe (128), North-Africa (31), Sub Saharan-Africa (28), Middle Asia (41), East Asia (16), and Latin America (32). There were also 36 Anglo-Saxons from outside the European Union. The German sample comprised of N = 774 research volunteers (320 males, 454 females; age 14-33, age average 22; 2).

All participants completed a version of the Acculturation Attitudes Scales (AAS). Form (a) assessed acculturation attitudes from the viewpoint of the immigrants, whereas form (b) measured acculturation expectations from the viewpoint of the German participants.

Study 2. The immigrant sample comprised of N = 105 participants (51 males, 54 females, age 17-29, age average 22; 3). They came from Turkey (N = 50) and Eastern Europe (N = 55).

The German comparison sample was *N* = 120 (55 males, 65 females, age 18-27, age average 22; 7).

Also in this study, participants completed a version of the AAS (see above). Additionally they were administered the Zuckerman-Kuhlman-Personality-Questionnaire (ZKPQ), the Dogmatism Scale (assessing Open-Mindedness), the Trait Meta-Mood Scale (TMMS 24), and the Coping Inventory for Stressful Situations (CISS).

Study 3. All participants in this study were immigrants either from Turkey or Kurdistan (*N* = 266; 133 males, 131 females, for 2 subjects gender was missing; age 14-48, age average 23; 11).

Instruments used were the AAS (see above), the Satisfaction With Life Scale (SWLS), the Subjective Happiness Scale (SHS), and the Beck Depression Inventory (BDI).

Results and Discussion

Overview of Analyses

The first part of the analyses addressed the Acculturation Attitudes Scales' underlying structure and item-scale validity using exploratory factor analyses (EFA) in immigrant and German samples. The factorial structure and relationships between acculturation styles were additionally examined using confirmatory factor analyses (CFA).

In the second part of this paper, correlates of the four acculturation styles will be described. Particularly we will report on relationships with personality dimensions, cognitive styles, coping, emotional intelligence, and forms of psychological adaptation.

Exploratory Factor Analyses and Psychometric Characteristics

Data of studies 1 and 2 were aggregated for the present analyses: however separate exploratory factor analyses (EFA) were conducted for the Germans and the immigrants to investigate potential differences in how acculturation styles are represented that would be possibly reflected in the underlying structure of the instrument and the pattern of loadings.

So for each group, all 24 AAS items were entered in a principal components analysis. According to the scree criterion, four factors were extracted, accounting for 59% and 48% of the total variance, respectively. An orthogonal Varimax rotation led to the most consistent pattern of loadings across both groups (see Table 1).

Table 1

Exploratory Factor Analyses of the Acculturation Attitudes Scales (AAS) for Germans and Immigrants living in Germany

Item	No	CFA	Germans				Immigrants			
			INT	SEP	ASS	MRG	INT	SEP	ASS	MRG
Integration_5	21	+	.840				.806			
Integration_6	24	+	.825				.756			
Integration_4	18	+	.742				.483			
Integration_3	8	+	.731				.461			
Integration_2	3		.731				.433			
Integration_1	1		.672				.731			
Segregation_1	6		.400	.515				.544		
Segregation_2	7	+		.808				.753		
Segregation_4	13	+		.707				.798		
Segregation_6	20	+		.703				.515		
Segregation_5	15	+		.653				.733		
Segregation_3	10			.632				.445		
Assimilation_1	4	+			.548				.670	
Assimilation_3	11	+			.547				.504	
Assimilation_2	9	+			.743				.629	
Assimilation_6	23	+			.771				.507	.456
Assimilation_5	22				.609				.468	.444
Assimilation_4	17				.708					.630
Marginalization_4	14				.419	.568				.558
Marginalization_3	12	+				.745				.647
Marginalization_5	16	+				.724				.688
Marginalization_6	19	+				.687				.562
Marginalization_1	2	+				.601			.450	
Marginalization_2	5					.484			.545	

Note. No = number of item in questionnaire; CFA (+) = item selected for confirmatory factor analyses; INT = Integration, SEP = Separation, ASS = Assimilation, MRG = Marginalization; only salient loadings (> .40) are displayed; joined data from studies 1 and 2.

In both samples, a clear factorial structure was evident in the pattern of loadings. In the German sample, all items had their dominant loading on their theoretically assigned factor, resulting in perfect hit rates. In the immigrant sample, 21 out of 24 items loaded on their theoretically expected factors. So generally speaking, hypothesis 1 stating four distinguishable acculturation styles seemed to be largely supported across both Germans and immigrants.

Let us briefly reflect on the few cases of item cross loadings. It is to note that the strongest overlap was observed with items belonging to the Assimilation or Marginalization factors, possibly indicating the proximity of these two acculturation styles as represented by the immigrants, since they both reflect loss of their heritage cultures. This finding could have the theoretical implication that both factors are not sufficiently distinctively represented (and possibly practiced) by immigrants, which would question the existence of four separable factors of acculturation. However, part of the effect could equally result from inadequate items that were not meaningful (not correctly understood) or applicable for a few participants in the heterogeneous immigrant sample. The latter would imply a measurement problem rather than a conceptual one. We will return to this question later using confirmatory factor analyses.

Table 2

Means, Standard Deviations and Reliabilities of the Acculturation Attitudes Scales (AAS)

	M (SD)		t(ΔM)	Cronbach's Alpha[a]	
Acculturation Style	Immigrants	Germans		Immigrants	Germans
Integration	3.61 (.85)	3.81 (.89)	4.42***	.70	.88
Assimilation	1.96 (.82)	2.05 (.68)	2.34*	.78	.83
Separation/Segregation	2.68 (.89)	2,35 (.77)	7.75***	.72	.83
Marginalization	1.83 (.68)	1.66 (.60)	5.17***	.62	.81

Note. $t(\Delta M)$ = t value of test of difference between group means (*df* =1531); * $p < .05$, *** $p < .001$;
[a] 6 items per scale; joined data from studies 1 and 2.

Psychometric characteristics of the Acculturation Attitudes Scales (AAS) are displayed in Table 2 for immigrants as well as for Germans. Taking into consideration their brevity, all of the 6-item scales possessed sufficiently high internal consistencies. However, all Cronbach's Alphas obtained for Germans exceeded those obtained for the immigrants by about 10 points. This finding could also indicate problems associated with some of the items in the immigrant sample.

Empirical means of the four scales indicate the preference for the respective acculturation style in each group. It is important to note that the immigrants' preferred acculturation attitude and the Germans' preferred acculturation expectation show the same order across the four styles. Integration clearly is the most preferred option followed by Separation/Segregation and Assimilation. The least preferred one in both groups is Marginalization. But there were also differences between groups for the four acculturation styles. Compared with what immigrants indicated themselves, members of the national society had higher expectations towards immigrants to practice Integration and Assimilation, whereas they valued less Separation and Marginalization.

Confirmatory Factor Analyses

Some of the previously raised questions were then addressed using confirmatory factor analyses (CFA). In the following section, some preparatory steps will be briefly reported; next, two mayor confirmatory analyses will be described. The first CFA tested the factorial structure of acculturation attitudes as assessed with the AAS. The second CFA tested the comparability of the factorial structure across immigrants and Germans. The latter could be also regarded a test of structural equivalence between acculturation attitudes of immigrants and expectations of German nationals.

Prior to these analyses, adequate indicators for the CFA were selected from the AAS items. Based on the German and immigrant datasets, as well as on additional datasets not included in this paper, we selected four items as indicators for each of the acculturation styles. Selection criteria were clear item-scale characteristics, pattern of loadings in the EFAs, sufficient variability, and shape of the distribution (approximating normal distribution). The final selection of indicators can be inferred from Table 1.

The combined dataset obtained from studies 1 and 2 was also used for the CFAs. As outliers and missing values can bias the estimation of parameters, we excluded all participants with more than two missing items per factor or more than 25% missing responses in total (37 immigrants, 12 Germans). Additionally, bivariate outliers according to a joint criterion based on student's residuals, cook distances and leverage were removed (24 immigrants, 29 Germans) prior to computing covariance matrices. All analyses were conducted with LISREL 8 (Jöreskog & Sörbom, 1996).

The fit of the theoretical model to data was assessed with the Root-Mean-Square-Error-of-Approximation (RMSEA; Steiger, 1990) as well as with the Goodness-of-Fit Index (GFI; Jöreskog & Sörbom, 1996). Parsimony of the models was estimated with the Adjusted Goodness-of-Fit Index (AGFI; Jöreskog & Sörbom, 1996). Conventionally, the following criteria should be met to accept a model: RMSEA below 0.08, GFI above 0.90, and AGFI above 0.85. If more than one model fitted the data, chi-square difference tests were computed when applicable. Model

selection was based on the Akaike Information Criterion (AIC; Akaike, 1974), which takes into account fit and parsimony of the model. The model with the smallest AIC is conventionally selected.

In the first step using CFA, immigrant and German samples were analyzed separately, but identical models were specified (see Table 3; models No 1-6; fit indices for immigrant sample upper half, fit indices for German sample lower half).

Table 3

Fit Indices for the Confirmatory Factor Analyses of the Acculturation Attitudes Scales (AAS)

No	Model	χ^2 (*df*)	RMSEA	GFI	AGFI	AIC
Immigrants						
1	4 Correlated Factors (INT, SEP, ASS, MRG)	315.18 (98)	0.06	0.94	0.91	381.56
2	3 Correlated Factors (INT, SEP, ASS-MRG)	617.01 (101)	0.10	0.87	0.82	762.54
3	3 Correlated Factors (INT-SEP, ASS, MRG)	640.56 (101)	0.10	0.87	0.82	778.72
4	2 Correlated Factors (INT-SEP, ASS-MRG)	926.97 (103)	0.13	0.81	0.75	1159.88
5	2 Correlated Factors (INT-SEP, ASS-MRG-SEP)	911.75 (99)	0.13	0.81	0.74	1163.25
6	1 Factor (INT-SEP- ASS-MRG)	1790.55 (104)	0.19	0.67	0.57	2347.87
Germans						
1	4 Correlated Factors (INT, SEP, ASS, MRG)	249.81 (98)	0.04	0.96	0.95	326.83
2	3 Correlated Factors (INT, SEP, ASS-MRG)	773.08 (101)	0.10	0.88	0.84	957.35
3	3 Correlated Factors (INT-SEP, ASS, MRG)	887.70 (101)	0.10	0.87	0.82	1101.91
4	2 Correlated Factors (INT-SEP, ASS-MRG)	1406.15 (103)	0.13	0.80	0.74	1747.44
5	2 Correlated Factors (INT-SEP, ASS-MRG-SEP)	1376.61 (99)	0.13	0.81	0.73	1707.61
6	1 Factor (INT-SEP- ASS-MRG)	2132.98 (104)	0.17	0.71	0.63	2785.95

Note. χ^2 (*df*) = Model Chi-Square, RMSEA = Root Mean Square Error of Approximation, GFI = Goodness of Fit Index, AGFI = Adjusted Goodness of Fit Index, AIC = Akaike Information Criterion. Models 1-6 are identically specified for the Migrant and German Subsamples. Model 1 tests the predicted four-factor solution, Models 2-6 test alternative structures (see text for details); joined data from studies 1 and 2.

The first model tested was the theoretically expected one: Integration, Separation/Segregation, Assimilation, and Marginalization were specified as correlated latent factors uniquely accounting for variance in their assigned indicators. According to the fit indices, model 1 could be accepted for the immigrant and the German sample. Path diagrams of model 1 are displayed in Figure 1 for both groups.
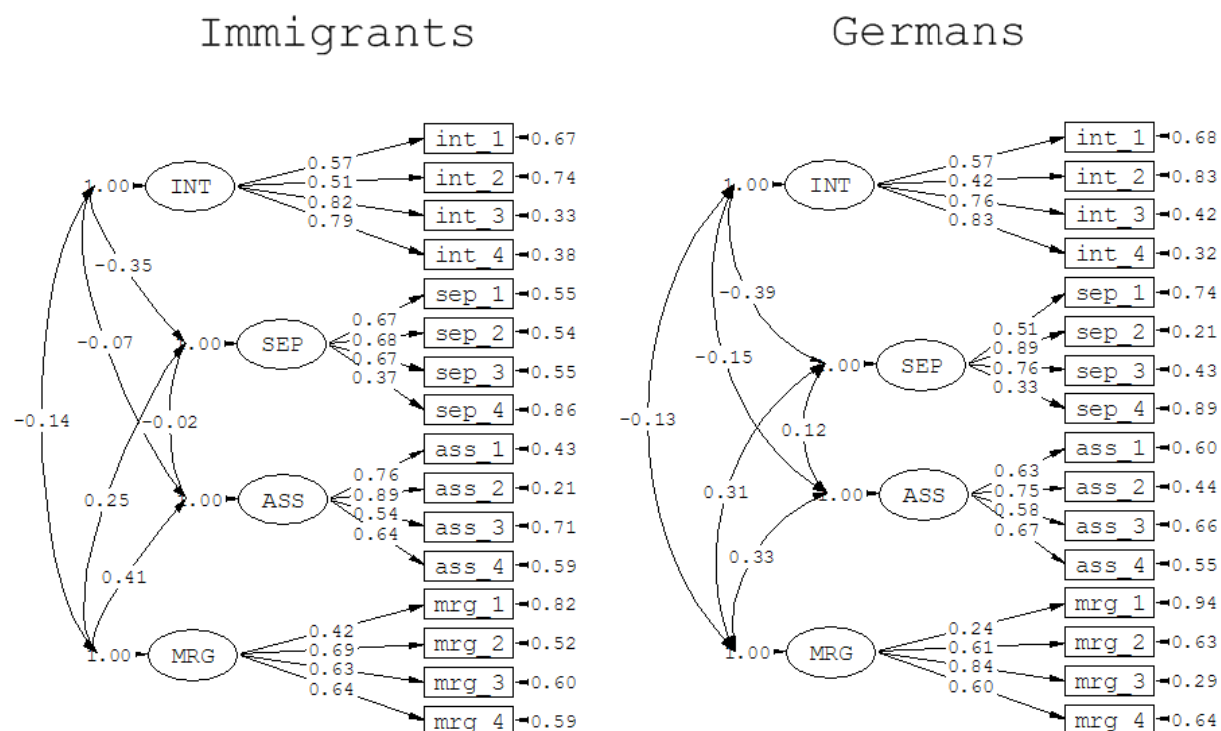
Figure 1. *Path diagrams of confirmatory factor analyses of the acculturation attitudes scales for the immigrant and german subsamples*

INT = Integration, SEP = Separation, ASS = Assimilation, MRG = Marginalization. All parameter estimates are completely standardized.

It should be noted that the latent variables were allowed to correlate in the model, but only moderate to low correlations occurred, which supports the notion of four separable factors. Nevertheless, some relationships turned out to be higher, such as (not surprisingly) for Assimilation and Marginalization in the immigrant sample.

So in a next step we formally tested whether these two acculturation styles are actually only one factor. Model 2 therefore specifies a joint Assimilation-Marginalization factor that accounts for variance in the eight items formerly used as Assimilation and Marginalization indicators. Measurement models for Integration and Separation were not modified. As can be seen in Table 3, this resulted in a significant deterioration of model fit. Model 2 was not acceptable according to any of the model fit indices in terms of absolute fit, neither for the immigrant nor for the German sample. Also in terms of a model comparison, model 2 fitted worse than model 1.

In a similar vein, we tested whether any other of the acculturation style factors that were found to be at least moderately correlated could be merged. Model 3 tested for a joint Integration-Separation Factor (see Figure 1, latent relation in German sample). Model 4 tested a somewhat more parsimonious 2-factorial structure with one Integration-Separation factor and another Assimilation-Marginalization factor. Model 5 is a derivate of model 4 with the modification that Separation items which seemed to be associated with Integration and Marginalization (see Figure 1) were allowed to load on both latent factors. Finally, model 6 only specifies one common factor, which would only be expected if all items are determined by one strong dimension (e.g., social desirability). None of the alternative models (models 2-6) could be accepted for any group.

To summarize the results of the first step of the CFA: the factorial structure of acculturation styles as assessed by the AAS could be best described by four underlying factors that uniquely determined variance in their theoretically assigned items. The correlations

between factors were generally low. Even moderately correlated acculturation styles were separable and could not be equated.

In the second step of the CFA, we tested to what extent the structure of acculturation styles was comparable between immigrants and Germans. This was motivated by apparently similar structural properties across both groups (see Figure 1). Comparing both samples is, formally speaking, the test of equivalence between acculturation attitudes of a heterogeneous immigrant sample and acculturation expectations of a German national sample.

Model 7 (see Table 4) made identical structural assumptions as model 1, but this time, both samples were analyzed simultaneously. This tested whether the four acculturation styles determine the same observable indicators across groups (structural equivalence). Model 7 could be accepted.

Model 8 was derived from model 7 with the additional constraint that the correlations between the latent factors (acculturation styles) were equal across both groups. As can be seen in Table 4, the common latent relations estimated in model 8 fitted both datasets. A slight increase in global χ^2 was not significant. Additionally, the model comparison index AIC favored the more parsimonious model 8 over model 7. So far, this means that acculturation attitudes are conceptually equivalent across both groups.

Table 4

Fit Indices for Group Comparisons between Immigrant and German Samples of the Acculturation Attitudes Scales (AAS)

No	Model	IMG GFI	GER GFI	Global Fit χ^2 (df)	$\Delta\chi^2$ (df)	$p(\Delta\chi^2)$	RMSEA	AIC
7	Equal Structure (i.e., Model 1)	0.94	0.96	564.99 (196)	–	–	0.051	708.39
8	Equal Relations between Factors	0.94	0.96	573.55 (202)	8.56 (6)	.19	0.050	704.20
9	Equal Relations and Loadings	0.93	0.96	658.01 (218)	93.02 (22)	< .001	0.053	761.43
10	Equal Relations, Loadings, and Residuals	0.92	0.94	940.03 (234)	375.04 (38)	< .001	0.064	1032.77

Note. GFI = Goodness of Fit Index, separately for IMG = immigrant sample and GER = German sample, χ^2 (df) = Model Chi-Square, $\Delta\chi^2$ (df) = Chi-Square Difference Test (to Model 7), RMSEA = Root Mean Square Error of Approximation, AIC = Akaike Information Criterion; joined data from studies 1 and 2.

Models 9 and 10 were concerned with measurement issues. In model 9 it was tested whether (additionally to constraints of model 8) all 16 loadings of the indicator variables could be set equal across both samples. Despite acceptable (absolute) fit indices, the chi-square difference test clearly indicated a substantial decrease in model fit as compared with model 7 (see Table 4) and model 8 ($\Delta\chi^2$ [16] = 84.46; p < .001), so model 9 was rejected. Model 10, which additionally specified equal residual variances, could not be accepted either. As neither of the model's testing quantitative equality of the measurement models (relations between constructs and indicators) adequately fitted data, it was concluded that the manifestation of acculturation attitudes in self-reported behavioral preferences was at least gradually different between the heterogeneous immigrant sample and the German national sample. However, it could have likely been that only a few items with larger between groups differences had primarily contributed to this difference (cf. Figure 1). Additionally, given the relatively large datasets, there was surely more than enough power to detect even minor (practically less important) differences.

To conclude, the four acculturation styles were shown to be largely structurally equivalent across different samples. They were shown to possess the same underlying structure and relations irrespective of whether they were assessed as acculturation attitudes or expectations. Acculturation styles were shown to possess the same manifestations in observable indicators

across groups (pattern of loadings), only quantitative differences occurred between groups (magnitude of loadings).

Correlations with Personality

The next section will address Hypothesis 2, which stated that the four acculturation attitudes are characterized by a different pattern of relationships with personality variables. We chose to present relationships with personality variables in the form of correlations (see Table 4) to highlight correspondence without making causal assumptions at this point. Quite plausibly, some of the personality variables may causally determine the choice of acculturation strategy. This may especially be the case for some of the biologically/genetically routed temperament dimensions of the ZKPQ. Other variables like cognitive style or coping variables may overlap or be structurally related as facets of a common factor in a hierarchical personality model.

The presented analyses were based on the data of study 2, in which a number of important domains of personality were addressed, including temperament, cognitive styles, coping strategies, and emotional intelligence. At this point the reader shall be alerted to the fact that any selection of variables will be incomplete, so that some factors of importance in the acculturation process will be missing.

Nevertheless, as predicted, each acculturation style was characterized by a specific pattern of correlations in the investigated variables. The most important relationships will be highlighted and discussed in the following; more detailed information can be obtained from Table 5.

Table 5a

Correlations between Acculturation Attitudes and Personality

	Integration			Separation		
	IMG	GER	z(Δr)	IMG	GER	z(Δr)
Alternative Five (Zuckerman)						
Impulsive SS (IMPSS)	-.01	-.02	0.07	-.04	-.01	-0.22
Impulsiveness (IMP)	-.26 **	-.31 ***	0.40	.17	.25 **	-0.62
Sensation Seeking (SS)	.24 *	.29 **	-0.40	-.23 *	-.26 **	0.24
Sociability (SY)	.35 ***	.29 **	0.49	-.31 **	-.18 *	-1.02
Neuroticism-Anxiety (NANX)	-.17	-.25 **	0.62	.25 **	.27 **	-0.16
Aggression Hostility (AGHO)	-.29 **	-.36 ***	0.58	.25 **	.25 **	0.00
Activity (ACT)	.28 **	.21 **	0.55	-.10	-.01	-0.67
Open Mind (Rokeach)						
Open-Mindedness	.33 ***	.42 ***	-0.77	-.25 **	-.32 ***	0.56
Coping with Stressful Situations (Endler)						
Task Orientation	.30 **	.34 ***	-0.33	-.07	-.14	0.52
Emotion Orientation	-.21 *	-.26 **	0.39	.27 **	.29 **	-0.16
Avoidance Orientation	-.18	-.23 **	0.39	.23	.23 **	0.00
- Social Diversion	-.17	-.19 *	0.15	.36 ***	.26 **	0.82
- Distraction	-.19 *	-.26 **	0.54	.11	.21 *	-0.76
Emotional Intelligence (Mayer, Caruso, Salovey)						
Attention	.10	.13	-0.22	.33 ***	.26 **	0.57
Clarity	.36 ***	.42 ***	-0.52	-.28 **	-.31 ***	0.24
Repair	.35 ***	.37 ***	-0.17	-.27 **	-.33 ***	0.49
Social Desirability						
Infrequency (INF) / SD	.18	.19 *	-0.08	.14	.09	0.37

Note. * *p* < .05. ** *p* < .01. *** *p* < .001; IMG = Immigrants (*N* = 105), GER = Germans (*N* = 120); z(Δr) = z value of the test for correlation differences between both groups; data from study 2.

Table 5b

Correlations between Acculturation Attitudes and Personality

	Assimilation					Marginalization				
	IMG		GER		z(Δr)	IMG		GER		z(Δr)
Alternative Five (Zuckerman)										
Impulsive SS (IMPSS)	.02		-.05		0.52	.39	***	.29	**	0.84
Impulsiveness (IMP)	-.06		-.11		0.37	.41	***	.29	**	1.01
Sensation Seeking (SS)	.09		.01		0.59	.38	***	.28	**	0.83
Sociability (SY)	.14		.21	*	-0.53	-.19	*	-.22	*	0.23
Neuroticism-Anxiety (NANX)	.30	**	.33	***	-0.25	.29	**	.31	***	-0.16
Aggression Hostility (AGHO)	-.20	**	-.10		-0.76	.39	***	.38	***	0.09
Activity (ACT)	.28	**	.07		1.61	-.23	*	-.17		-0.46
Open Mind (Rokeach)										
Open-Mindedness	.20	*	.18	*	0.15	-.31	**	-.34	**	0.25
Coping with Stressful Situations (Endler)										
Task Orientation	.16		.14		0.15	.00		.02		-0.15
Emotion Orientation	.12		.17		-0.38	.20	*	.25	**	-0.39
Avoidance Orientation	.06		.05		0.07	.28	**	.30	***	-0.16
- Social Diversion	.22	*	.19	*	0.23	.26	**	.25	**	-0.08
- Distraction	-.10		-.09		-0.07	.30	**	.35	***	-0.41
Emotional Intelligence (Mayer, Caruso, Salovey)										
Attention	.20	*	.23	**	-0.23	-.31	**	-.29	**	-0.16
Clarity	.18		.15		0.23	-.34	***	-.29	**	-0.41
Repair	.20	*	.16		0.31	-.31	**	-.32	***	0.08
Social Desirability										
Infrequency (INF) / SD	-.09		-.01		-0.74	-.06		-.15		0.67

Note. * $p < .05$. ** $p < .01$. *** $p < .001$; IMG = Immigrants (N = 105), GER = Germans (N = 120); $z(Δr)$ = z value of the test for correlation differences between both groups; data from study 2.

Integration

This acculturation style had clear relationships with Zuckerman's (2008) ZKPQ dimensions. Integration was characterized by a high degree of Sociability and Activity and a low degree of Aggression/Hostility and Anxiety. The zero correlation with Impulsive-Sensation-Seeking resulted from an inverse pattern of correlations with both of its subscales: Impulsiveness was negatively correlated with Integration, whereas Sensation Seeking was positively correlated. Naturally, such personality characteristics facilitate taking attempts to come in contact with persons from both cultures. Similarly, Integration was positively related with Open-Mindedness (Rokeach, 1960), a necessary prerequisite to deal with the complexity of handling two culturally transmitted value and belief systems and associated behaviors at the same time.

With regard to coping strategies, Integration correlated positively with task orientation but negatively with emotion and avoidance orientation. In the coping literature (e.g., Endler & Parker, 1990, 1992), the latter two are considered as short-term oriented, whereas task orientation is considered the only strategy that resolves problems from a long-term perspective. Thus, people preferring Integration are equally characterized by their efficient and rational coping strategies.

A similar pattern occurred for subcomponents of Trait Emotional Intelligence (Salovey et al, 1995). Whereas high degrees of Attention are maladaptive and can lead to rumination and negative emotional states, clarity and repair are those components that are characterized by the mastery of one's emotions (e.g., Extremera & Fernández Berrocal, 2005). Integration was positively related with clarity and repair, speaking for the high level of meta-cognitive ability associated with this acculturation strategy.

Separation/Segregation

This acculturation strategy had an almost inverse pattern of relations with basic dimensions of temperament (as compared with Integration). People preferring Separation were low in Sociability and Sensation Seeking, but high in Neuroticism-Anxiety and Aggression. These personality characteristics should make it difficult for them to come in contact with people outside their own cultural group. Additionally, with their low degree of Open-Mindedness, they may not even be interested in doing so.

Separation was positively correlated with the rather maladaptive coping strategies emotion and avoidance orientation. Moreover, this style was positively correlated with the Attention component, but negatively with the clarity and repair components of emotional intelligence. Therefore, people preferring Separation can be characterized as reacting highly emotional in stressful situations, being aware of their perceived stress, but not being capable to adequately handle their negative effect.

Assimilation

Assimilation was the acculturation style that turned out to be least related with personality variables. However, the highest (positive) correlations were obtained with Neuroticism-Anxiety. Moreover, immigrants scoring high on Assimilation reported to be more active and less aggressive. This pattern of correlations makes Assimilation appear like an anxious form of acculturation (high Neuroticism-Anxiety), where immigrants strive hard (high Activity) to adjust themselves to the mainstream culture for not getting into conflict situations (low Aggression-Hostility).

Assimilation was positively correlated with social diversion, an avoidance-oriented coping strategy, which seems to fit into the scheme described above. Additionally, there was a moderate relationship with the rather maladaptive Attention component of the emotional intelligence framework.

Marginalization

This acculturation strategy was positively correlated with Impulsiveness, Neuroticism-Anxiety, and Aggression-Hostility, but was negatively related with Sociability. Such personality characteristics should make it difficult to maintain any positive relations with people from one's own or the mainstream culture.

It is noteworthy that Marginalization was the acculturation style most clearly related with basic dimensions of personality. Taking into consideration the generally low preference of Marginalization, the obtained pattern of correlations could also have resulted from participants who were even more likely than others to reject items of this socially undesirable acculturation style as well as items of undesirable personality dimensions. However, despite being negatively related with the infrequency scale (that served as a measure of social desirability), Marginalization was not more strongly related with this scale than the other acculturation styles.

Marginalization was positively correlated with emotion and avoidance oriented coping. Negative correlations with the emotional intelligence components clarity and repair also fitted in. However, Marginalization was also negatively correlated with Attention, which could be interpreted as a "don't care" mentality.

Table 6

Regression of Psychological Adaptation on Immigrants' Acculturation Attitudes

Psychological Adaptation	Standardized Regression Coefficients (β)							
	Integration		Separation		Assimilation		Marginalization	
Wellbeing	.31	***	-.38	***	.14	*	-.14	*
Happiness	.30	***	-.52	***	.05		-.25	***
Depression	-.24	***	.49	***	-.11		.04	

Note. * $p < .05$, *** $p < .001$; data from study 3.

Psychological Adjustment

This section will address Hypothesis 3, which stated that acculturation styles would be differently related with psychological adaptation. Evidence in this direction has been previously reported (see Berry, 1997). Usually, Integration is found to lead to the best psychological adjustment, whereas Marginalization to the worst, with the other two styles in between.

In the present study we were interested if self-reported acculturation styles as assessed with the AAS were equally predictive of a number of psychological adjustment variables. We tested these effects with data from study 3, in which we collected wellbeing (Diener et al., 1985), happiness (Lyubomirsky & Lepper, 1999), and as an inverse marker depression (Beck et al., 1988).

As expected, Integration was the acculturation style most clearly related with adaptive forms of psychological adjustment (see Table 6). Assimilation was not substantially related with any of the psychological adaptation variables. However, Separation/Segregation as well as Marginalization predicted negative psychological adjustment. In the present study, the negative relationships between adjustment and Separation turned out to be even stronger than those obtained for Marginalization.

General Discussion

The aim of the current study was to investigate the structure and correlates of acculturation styles (attitudes and expectations) as assessed with the Acculturation Attitudes Scales (AAS). First, the structure was addressed using exploratory and confirmatory factor analyses. Second, relationships of acculturation styles with personality variables and psychological adaptation were investigated. The analyses were based on data obtained from three studies conducted between 1998 and 2005, comprising a total of $N = 1799$ mostly young adults. About half of all participants were immigrants with diverse cultural origins living in Germany, the other half were German nationals. All of them completed the AAS, which assessed acculturation attitudes with the immigrants and acculturation expectations with the German participants.

Structure of the Acculturation Attitudes Scales (AAS)

Acculturation strategies can be considered a core topic in the area of acculturation research, and different modes of acculturation have been described (e.g., Berry, 1970; Berry et al, 1986). Despite successful application of these constructs in research, there is still debate to what extent Integration, Separation/Segregation, Assimilation, and Marginalization are inter-related or comparatively independent constructs. Specifically, the dimensionality of the underlying factors was discussed (e.g., Arends-Toth & van de Vijver, 2006; Chirkov, 2009). One aim of the present paper was to explicitly test the factorial structure of acculturation styles. Using EFA and CFA methods, it turned out that the AAS has a clear four-factorial structure. The four acculturation styles were shown to be independent factors. Their correlations were generally low, and even those styles that showed moderate relationships were best described as related but independent constructs. The structure of acculturation styles assessed as acculturation attitudes of immigrants and acculturation expectations of members of a national

sample were highly comparable, which underscores that the four strategies are generally represented as distinct modes to cope with acculturation demands.

Preference for Acculturation Styles among Immigrants and Nationals

The order of preference for the four acculturation styles was identical for immigrants and Germans. Integration was the most preferred style by both groups, followed by Separation/Segregation, Assimilation, and finally Marginalization. This order has not always been the same in Germany. As discussed elsewhere (e.g., Schmitz, 1987, 1989, 1994), acculturation preferences have changed over the last three decades. Integration has always been at the first place and Marginalization at the last. However, Assimilation and Separation changed places: previously Assimilation was the second most preferred style, today it is Separation. These changes seem to have taken place before the year 2000. Most data of the current study were collected in the stable period between 2002 and 2005.

Correlates with Personality

Personality variables were included in the present study as they have previously shown to be related with the choice of acculturation strategy (e.g., Schmitz 1992, 2003; Ward, Leong, & Low, 2004). The specific pattern of loadings obtained for the four acculturation styles further underscores their construct validity as independent styles with specific patterns of relations. We refrained from presenting analyses that would imply a causal direction between personality and the choice of acculturation style. But it is plausible that biologically routed personality dimensions (which are there at first place) may have direct or indirect effects on the choice of acculturation style, while cognitive styles and coping may be considered as structurally related in a broader personality hierarchy. Basic dimensions of personality were also shown to be consistently related with the experience of emotions (Costa & McCrae, 2002) and emotion-related variables. Therefore, personality may have direct effects on psychological adaptation as well as indirect effects mediated by, for instance, acculturation strategy.

Psychological Adaptation

Forms of psychological adaptation, including wellbeing, happiness, and as an inverse marker depression, were shown to be clearly predicted by the four acculturation styles. In line with previous findings (Berry, 1997; Berry & Sam, 1997), Integration was shown to be the most adaptive acculturation strategy, predicting happiness, wellbeing, and low scores of depression. Assimilation seemed to be ambivalent, whereas Separation was most strongly predicted negative outcomes – even more than Marginalization in our present sample.

Validity of the Acculturation Attitudes Scales

With its 24 items the AAS can be considered a short and reliable instrument that can be easily included in larger research batteries. With its clear factorial validity, scales of the AAS allow the specific assessment of the four acculturation styles. The concurrent validity of the scales with some personality variables and psychological adjustment underscores their quality. The instrument was demonstrated to be comparable across cultural groups and across acculturation attitudes and expectations. This may encourage future research with the AAS also among other ethnic groups settled in different societies.

Limitations of this Study and Future Analyses

Some of the analyses required large datasets, so we decided to combine immigrants of different origins into one large sample. As previously discussed, this may have led to substantial noise in the heterogeneous immigrant sample. It would be desirable to replicate the core findings with more homogeneous immigrant samples. However, we are confident that results would be comparable to the ones obtained in the current study, as structural properties of acculturation styles and correlates were highly comparable for the combined immigrant and the German samples.

The primary aim of this paper was to address the structure of acculturation styles. Personality correlates were primarily included to demonstrate specific relationships with the four acculturation styles as a form of construct validation. The complex relations of acculturation, personality, cognitive styles, coping, and psychological adaptation should be analyzed in more detail in future research (including mediation and moderation analyses).

Future analyses should also address other relevant variables that could not be included in this short report, including gender, age, ethnic origin, time of living in new country, social activities, social adaptation problems, school and academic achievement. Investigations of these factors will help achieve a better understanding of the acculturation process as a whole. Such analyses were beyond scope of the present paper. But they should be carried out prior to making any proposals for application to policies and programs for use with specific adult immigrant groups who are settled in Germany.

Conclusion

Acculturation styles as assessed with the Acculturation Attitudes Scales (AAS) are best described assuming a four-factorial structure. Integration, Separation/Segregation, Assimilation, and Marginalization were shown to be independent factors that were only lowly correlated. The structure and relations were highly comparable for acculturation attitudes and acculturation expectations.

Further, the relative independence of acculturation styles was corroborated by their specific patterns of correlations with personality variables, including basic temperament dimensions, cognitive styles, coping, and components of emotional intelligence.

Acculturation attitudes also predicted psychological adaptation. Integration turned out as the most adaptive style, Assimilation as somewhat ambivalent. The most maladaptive were Separation and Marginalization.

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