Critical History of the Acculturation Psychology of Assimilation, Separation, Integration, and Marginalization

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The psychology of intercultural adaptation was first discussed by Plato. Many modern enculturation theories claim that ethnic minorities (including aboriginal natives, immigrants, refugees, and sojourners) can favor either the dominant culture, or their own minority culture, or both, or neither. Between 1918 and 1984, 68 such theories showed varied and inconsistent terminology, poor citation of earlier research, conflicting and poorly tested predictions of acculturative stress, and lack of logic, for example, 2 cultures in contact logically allow 16 types of acculturation, not just 4. Logic explains why assimilation = negative chauvinism = marginality, why measures of incompatible acculturative attitudes can be positively correlated, and why bicultural integration and marginalisation are confounded constructs. There is no robust evidence that biculturalism is most adaptive.

As intelligent and adaptive cultural beings, all humans have some likelihood of adopting or otherwise reacting to aspects of alien cultures that they encounter. "Acculturation comprehends those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups" (Redfield, Linton, & Herskovits, 1936, p. 149). For several converging reasons, acculturation is an increasingly important topic: (a) New technologies for high-speed, high-volume transportation and communication make it increasingly easy for cultures to be in contact worldwide; (b) war, political oppression, economic disparities, and environmental pressures produce millions of new migrants annually; (c) regional and global free-trade arrangements encourage international marketing and international recruitment of skilled personnel; and (d) the liberal political ideologies of the dominant, developed nations cause their governments, their minorities, and their academics to attend to acculturative rights and remediations (Rickard, 1994).

The Fourfold Theory

One popular approach to acculturation research presumes that a person can appreciate, practice, or identify with two different cultures independently of one another. As shown in Figure 1, each culture can have a positive or negative valence, representing a person's positive and negative attitudes, preferences, attachment, identification, and other inferred psychological states or representing the presence or absence of cultural behaviors, language use, ethnic names, dress, foods, and other observable manifestations of culture. Metaphorically, this might be considered to be acceptance or rejection of each culture, or saying "yes" or "no" to each culture. The interaction of a minority culture M and a dominant culture D, each with two valences, can be conceived to create four generic types of acculturation: (a) The dominant culture is favored ($-M+D$), (b) the minority culture is favored ($+M-D$), (c) the two cultures coexist in some form of biculturalism ($+M+D$), or (d) they are both diminished ($-M-D$). These four generic types of acculturation seem to cover all possibilities, to be logically exhaustive, and to thus be universally applicable.

What these are types of depends on what questions are being asked of what people and

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                    M I N O R I T Y
                    C U L T U R E ?

                    +M              -M
                    "yes"           "no"
                                      |
D   C                                 |
O   U       +D      +M +D       -M +D |
M   L      "yes"   "yes, yes"  "no, yes"
I   T                         - - - - | - - - -
N   U                                 |
A   R       -D      +M -D       -M -D |
N   E      "no"    "yes, no"   "no, no"
T   ?                                 |
                                      |
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Figure 1. Conceptual schematic of the fourfold taxonomy. Positive and negative responses concerning the minority culture M and the dominant culture D create four generic types of acculturation.

for what purpose. For example, if one is asking about language abilities, these alternatives represent four types of linguistic acculturation: (a) unilingualism in the dominant language $(-M+D)$, (b) unilingualism in the minority language $(+M-D)$, (c) bilingualism $(+M+D)$, and (d) demi-lingualism $(-M-D)$. In reference to general aspects of culture, these four types of acculturation have been variously labeled *adaptations, alternatives, attitudes, feelings, goals, identities, modes, options, orientations, outcomes, paths, policies, preferences, strategies,* or *styles* (Berry, 1988, 1992, 1994, 1997a, Berry, Kim, Power, Young, & Bujaki, 1989; Berry, Poortinga, Segall, & Dasen, 1992; Hutnik, 1991; Williams & Berry, 1998). For instance, among politicians discussing minority education, these are four types of acculturation policies; among parents discussing their aspirations for their children, they are four types of acculturation goals; and among children discussing the cultural patterns of their friendships and activities, they are four types of acculturation styles.

Regardless of the cultures in question, the topic, or the intent, the four generic types of acculturation are now commonly labeled (a) assimilation $(-M+D)$, (b) separation $(+M-D)$, (c) integration $(+M+D)$, and (d) marginalization $(-M-D)$, following the practice of Berry (1997a). Development of the fourfold acculturation theory is often credited to Berry and his associates (e.g., Berry, 1970; Berry & Annis, 1974; Berry, Evans, & Rawlinson, 1972; Berry, Kalin, & Taylor, 1977; Berry

et al., 1989; Sommerlad, 1968; Sommerlad & Berry, 1970). Their terminology has moved into common usage and has been adopted, sometimes with modifications, by other leaders in acculturation psychology, including Birman (1994), Bourhis (e.g., Bourhis, Moïse, Perrault, & Senécal, 1997), Hutnik (1991), Phinney (e.g., Phinney, Horenczyk, Liebkind, & Vedder, 2001), and Ward (1996, 1997).

Fourfold acculturation research usually involves people in acculturation contexts answering Likert-scale questions about their cultural attitudes, identities, or practices, as well as questions about distress, psychopathology, life satisfaction, and other measures of adaptation, to determine (a) the distribution of types of acculturation among the group being studied and (b) the relationships between measures of acculturation and measures of adaptation. The usual end is to find evidence that integration is most preferred and most adaptive such that it can be recommended (e.g., Berry, 1974; Berry et al., 1977; Montreuil & Bourhis, 2001; Williams & Berry, 1998). This paradigm is reported to almost always produce the following kind of evidence:

> Acculturation strategies have been shown to have substantial relationships with positive adaptation: integration is usually the most successful; marginalization is the least; and assimilation and separation strategies are intermediate. This pattern has been found in virtually every study, and is present for all types of acculturating groups. Why this should be so, however, is not clear. (Berry, 1997a, p. 24)

Critiques of the Fourfold Paradigm

Questions about the fourfold paradigm have begun to arise, and it is increasingly under criticism. In 1997, the journal *Applied Psychology* provided space for seven critics and a response (Berry, 1997b; Horenczyk, 1997; Kagitcibasi, 1997; Lazarus, 1997; Peck, 1997; Schönpflug, 1997; Triandis, 1997; Ward, 1997). The critics complimented the paradigm but also argued that it lacks utility and explanatory force and that it should be expanded to include, for example, a greater focus on subcultures, dominant group attitudes, or acquisition of cultural skills. In 1998, the International Association for Cross-Cultural Psychology hosted a conference symposium, "A Critical Appreciation of Berry's Model," in which the paradigm was criticized for its lack of psychological and cultural content

and for its ineffectiveness in explaining differences between groups or between individuals (Boski & Kwast-Welfeld, 1998; Schmitz, 1998; Weinreich, 1998). A year later, van de Vijver, Helms-Lorenz, and Feltzer (1999) used a factor-analytic study to demonstrate that the four acculturation scales in concert measure only one dimension, not two or four. From outside the field of cross-cultural psychology, Escobar and Vega (2000) have recommended dismissal of acculturation measures, including fourfold measures, because they are ambiguous, lack predictive power, and are based on assumptions about culture that any anthropologist would find incredulous and because acculturation scales proliferate without any comparative, critical reviews of their performance.

My entry into criticism of fourfold acculturation research began with my supervision of Merametdjian's (1995) thesis study of Somali acculturation in Norway. Impossible results were revealed in the data, such as respondents endorsing two, three, or four types of acculturation, which are defined at the construct level to be mutually exclusive. Rudmin (1996) found such problems common in other acculturation studies and criticized the paradigm for poor psychometrics, incorrect statistical analyses, and an excessive focus on minorities. A subsequent tutorial explained how response biases might affect the psychometrics of acculturation research (Rudmin, 1999b). Subsequently, Rudmin and Ahmadzadeh (2001) used new data as well as detailed reanalyses of published studies to demonstrate (a) that the construct of marginalization is misconceived and misoperationalized, (b) that the fourfold constructs are ipsative with one another, that is, their null intercorrelation is not $r = 0.00$, but $r = -.33$ (Hicks, 1970), (c) that fourfold data are systematically contaminated by acquiescence bias, and (d) that fourfold questionnaire items violate the usual established standards for adequate psychometric items.

Because Rudmin's 1996 conference paper is unpublished, arguments raised there that do not appear in the Rudmin and Ahmadzadeh (2001) article are briefly restated here. Rudmin (1996) faulted the fourfold measures for poor validity. This can be seen most dramatically in U. Kim's (1988) study of Korean acculturation in Canada. Kim's is the only acculturation study to use several control groups, and his results show that fourfold scales are measuring something other than acculturation phenomena. Kim administered an identical questionnaire to a sample of ethnic Koreans residing in Canada, to a sample of Koreans residing in Korea who had applied for emigration to Canada, and to a matched sample of Koreans residing in Korea who had not applied for emigration to Canada. Rudmin (1996) administered Kim's English version of the same questionnaire to a sample of students in Norway and asked them to indicate how they imagined Koreans in Canada would answer.

As shown in Table 1, the four groups exhibited similar patterns of mean scores based on a 5-point Likert scale: integration was rated highest (a little more than 4.0), assimilation was rated lowest (a little more than 2.0), and marginalization and separation fell in between. Even the standard deviations followed a consistent pattern: smallest for integration, a little larger for marginalization, larger still for assimilation, and largest for separation. The concordance correlations were almost perfect ($r = 1.00$) for mean scale scores and standard deviations. Thus, the Koreans experiencing acculturation in Canada answered in a manner nearly identical to (a) Koreans who had self-selected for acculturation but not yet experienced it, (b) Koreans who had no interest in experiencing Canada, and (c) Norwegians who had little knowledge and no experience of either Korea or Canada. As a result, these fourfold measures seem to be devoid of information about the acculturation of Koreans in Canada and to be composed only of response bias artifacts.

Rudmin (1996) also criticized the fourfold paradigm for its excessive focus on minority groups. This is neither a new criticism nor one unique to psychology. Mason (1955) criticized anthropological studies of acculturation for failing to apply "the same critical standards of observation to the donor side of contact situations as they do to the receiving side" (p. 1264). It is perplexing that this bias is so strong despite definitions of acculturation, such as that of Redfield et al. (1936, p. 149) quoted in the opening paragraph of this article, that declare acculturation to be a two-way process of cultural change. Early acculturation theorist Alexander Chamberlain argued that minority group acculturative influences on the dominant society should be acknowledged and documented, both for the

Table 1
Scale Scores for Koreans in Canada and Three Control Groups, All Responding to the Fourfold Acculturation Scales

Scale	Koreans in Canada residing as migrants (N = 92)		Koreans in Korea preparing to emigrate to Canada (N = 187)		Koreans in Korea not applying to emigrate to Canada (N = 172)		Norwegians in Norway imagining being Koreans in Canada (N = 24)	
	M	SD	M	SD	M	SD	M	SD
Integration	4.27	0.33	4.14	0.35	4.03	0.35	4.07	0.35
Marginalization	2.70	0.41	2.60	0.35	2.47	0.37	2.98	0.40
Separation	2.67	0.64	2.93	0.50	2.98	0.49	2.63	0.62
Assimilation	2.10	0.51	2.18	0.40	2.04	0.41	2.06	0.56

First three samples' concordance for scale means: $r = .99$
First three samples' concordance for standard deviations: $r = .98$
All four samples' concordance for scale means: $r = .97$
All four samples' concordance for standard deviations: $r = .97$

Note.   Responses were made on 5-point Likert scales. Korean data are from Kim (1988), and Norwegian data are from Rudmin (1996).

esteem of the minority and for the enlightenment of the majority (Rudmin, 1990, 1999a). Few fourfold studies, if any, have examined how the dominant majority adopts aspects of the minority culture.

A fixed focus on the acculturation of minorities implies that acculturation is something that happens only to minority people and that the cultures of dominant people are somehow monolithic, immutable, and without acculturative origins. To suggest that minorities are psychologically reactive to intercultural contact and that dominant groups are not almost implies that minority people are a different species of psychological being, one distinct from the majority. This is one step down the road to racism (Johansen, 2002). To the contrary, as a result of the speed and ease of world travel, global communications, and international marketing, all humans, everywhere, are subject to acculturation processes, whether they know it or not and whether they like it or not. There are no contained societies or protected people isolated from intercultural contact or exempt from cultural change. It is scientifically and ethically wrong to presume otherwise in our theories, in the performance of our research, or in the presentation of our theories and research to the public.

A subsequent reexamination of the first 18 samples studied using Berry's fourfold acculturation paradigm casts doubt on his conclusions quoted earlier. The 18 samples summarized in Table 2 include 13 different aboriginal groups in Australia and Canada selected to represent different degrees of acculturation, plus 2 immigrant groups in Canada, plus 1 nonaboriginal, nonimmigrant minority group in Canada, plus 2 samples of the majority society indicating the type of acculturation they would endorse for Native Peoples residing in Canada. Berry himself directed all of these studies except those conducted by Sikand (1980), who had attempted an exact methodological replication of Berry and Annis's (1974) study. The first 15 studies involved the use of two measures of maladaptation: psychological marginality and psychosomatic stress. Two measures of maladaptation allow replication of results within a study as well as determination of the two scales' convergent validity as measures of maladaptation.

Consider Berry's (1997a, p. 24) conclusions, quoted earlier, that integration has a substantial relationship to adaptation, evident in virtually every study regardless of acculturation contexts, and that integration is the most successful type of acculturation. This claim would be well justified (a) if each study replicated statistically significant negative correlations between integration and different measures of maladaptation (i.e., between integration and marginality and between integration and stress), (b) if these neg-

Table 2
Correlations of Acculturation Modes With Maladaptation Operationalized as Marginality and Stress

Study and sample	Assimilation		Separation		Integration		Validity (r): Marg.–Stress
	Marg.	Stress	Marg.	Stress	Marg.	Stress	
Berry (1970):							
Storm Cove ($N = 31$)	—	—	+.47	+.43	—	—	+.66
Berry & Annis (1974)							
Wemindji Cree ($N = 61$)	—	—	+.36	+.26	—	—	+.71
Fort George Cree ($N = 60$)	—	−.52	+.31	—	—	—	+.76
Tachie Carrier ($N = 60$)	—	—	+.45	+.46	—	−.33	+.69
Fort St. James Carrier ($N = 61$)	—	−.36	+.28	+.43	—	—	+.64
Hartley Bay Tsimshian ($N = 56$)	—	—	—	—	—	−.29*	+.66
Port Simpson Tsimshian ($N = 59$)	—	—	—	—	—	—	+.51
Westport Euro-Canadians ($N = 48$)	+.31	+.28	−.30	—	—	—	+.69
Berry (1976)							
Aroland Cree ($N = 39$)	—	—	+.34	—	—	—	+.58
Longlac Cree ($N = 37$)	—	—	—	—	−.35	—	+.61
Sioux Lookout Cree ($N = 31$)	—	—	—	—	—	—	+.76
Sioux Lookout Euro-Canadians ($N = 40$)	—	—	—	—	—	—	+.66
Sikand (1980)							
Garden Hill Oji-Cree ($N = 60$)	—	—	—	—	—	+.34	—
Nelson House Cree ($N = 60$)	—	—	—	—	—	—	+.37
Peguis Cree ($N = 60$)	—	—	−.32	—	—	—	+.36
Berry et al. (1989)							
French-Canadians ($N = 49$)	+.36		−.35		−.65*		
Portuguese-Canadians ($N = 117$)	+.24		+.45		—		
Korean-Canadians ($N = 150$)	+.30		+.52		—		
Minimum r	−.18	−.52	−.35	−.24	−.65	−.33	+.21
Maximum r	+.36	+.28	+.52	+.46	+.15	+.34	+.76
Median r	−.03	−.06	+.26	+.09	−.09	−.04	+.66
Corresponding R^2	.00	.00	.07	.01	.01	.00	.44

Note. Nonsignificant correlations ($p > .05$) are shown as dashes. Asterisks mean that the integration correlation was significantly more negative ($p \leq .05$) than the corresponding correlations with both assimilation and separation. Marg. = marginality.

ative correlations were significantly more negative than the corresponding correlations computed for assimilation and separation, and (c) if the R^2 values of these negative correlations showed substantial effect sizes, for example, $R^2 \geq .20$.

However, Table 2 reveals that two thirds of the correlations are nonsignificant, including 28 of the 33 correlations between integration and maladaptation, which means that they must be presumed to represent population correlations of .00. The three criteria by which integration can be claimed to be the best alternative all failed. First, never once was a significant negative correlation between integration and one measure of maladaptation replicated with the other measure of maladaptation. Second, only 2 times out of 33 was a negative correlation of

integration and maladaptation significantly more negative than the corresponding correlations for both assimilation and separation. Finally, integration attitudes commonly accounted for 1% or less of the variance in maladaptation. The correlations between types of acculturation and measures of maladaptation shown at the bottom of Table 2 all ranged from negative to positive, indicating that there are no consistent or regular patterns of correlations across all acculturation contexts.

These first 18 fourfold acculturation studies come to two robust conclusions. First, in the case of psychometric performance, stress and marginality show well-replicated convergent validity as measures of maladaptation when the latter is operationalized as difficulty in life and has little cultural or acculturative content (Berry, 1976, p. 178). Second, separation is a distressing type of acculturation for minority individuals without political voice or socioeconomic force. The primary exception in Table 2 was the French-Canadians, for whom the separation type of acculturation coincided with reduced distress. But French-Canadians in Canada are part of an international community of high prestige, and they have a separatist political party that gives them an effective voice for their political aspirations.

There is no empirical evidence in these first 18 studies by which to advocate for integration. In fact, integration appears to be the worst type of acculturation according to Berry's (1976, p. 192) comparison of nine Native communities (Samples 2–7 and 9–11 in Table 2) and his report that the more a community favors integration, the more it experiences marginality ($r = +.85$, $n = 9$, $p < .05$) and stress ($r = +.75$, $n = 9$, $p < .05$). If the research is presumed to be faultless, then assimilation should be the recommended type of acculturation for Native communities, because the more a community favors assimilation, the less it experiences marginality ($r = -.91$, $n = 9$, $p < .05$) and stress ($r = -.84$, $n = 9$, $p < .05$).

However, even if the acculturation measures were shown to be valid, and even if the studies had shown that integration is consistently less distressful than the other types of acculturation, this still would not have been a strong or persuasive argument by which to advocate for public policies of integration. "Adaptation" refers to success in the ecological context, and what

this means has yet to be well researched from the emic perspectives of ethnic minorities or from the emic perspectives of the majority or its representatives in government. If adaptation includes economic and political success, then psychometric measures of distress do not adequately operationalize acculturative adaptation (Taft, 1986). Furthermore, integration rests firmly on classic liberal political arguments for individual and collective rights. A finding that integration is less nerve wracking than alternative types of acculturation would have added little to the political arguments. Minimizing distress is not a usual criterion for determining public policy. It is plausible that acculturation research has hindered rather than helped acculturating minorities by shifting the focus of discussion away from their rights and from their need to have effective political voices advocating for their rights. It may not have been beneficial to have shifted the focus onto minority groups' psychosomatic problems and their difficulties in managing their own lives.

The fourfold paradigm continues to cast its confusions even into the most recent research. For example, Montreuil and Bourhis (2001) used a fourfold taxonomy to study majority group attitudes toward "valued" and "devalued" immigrants. In Table 1 of that study, segregationism and assimilationism scores were reported to be correlated at $r = +.60$ ($n = 637$, $p < .001$), which seems to indicate that people who wanted the minority to segregate ($+M-D$) from the majority also wanted the minority to assimilate ($-M+D$) to the majority. In the metaphor of Figure 1, people who answered "yes, no" also tended to answer "no, yes" to the same issues. Such a high, positive correlation between antithetical constructs is virtually impossible conceptually and should cause concern about the constructs, their operationalization, and the quality of the responses.

This correlation $r = +.60$ was published in the *Journal of Cross-Cultural Psychology* under the editorship of van de Vijver, who himself had earlier coauthored a fourfold acculturation study in which the data were subjected to factor analysis (van de Vijver et al., 1999). However, the fourfold scales are ipsative with one another and are thus unsuitable for factor analysis or other multivariate methods that require that the input measures be independent and have null intercorrelations of $r = .00$ (Cornwell & Dun-

lap, 1994; Guilford, 1952; Johnson, Wood, & Blinkhorn, 1988). Thus, it was not a discovery by van de Vijver et al. (1999) to have found that the fourfold scales are unidimensional, with integration anchoring one end of the dimension and assimilation, separation, and marginalization at the other end. This result arises tautologically from the ipsative design of the fourfold constructs. Once respondents agree to the integration items—and respondents almost always agree to integration items even if they lack acculturative experience or knowledge of the two cultures in question—they should disagree with the other acculturation scales. This is why Berry et al. (1977, pp. 132–133) could operationalize an integration measure using Likert items from the other acculturation constructs as negatively keyed questions about integration. Zick, Wagner, van Dick, and Petzel (2001) copied Berry et al. (1977) and also created a measure of multicultural integration that conceived the other types of acculturation to be nonintegration.

Purpose of the Present Study

The idea that there are four types of acculturation is very appealing. The popularity of the fourfold approach is widespread, enduring, and robust, despite the fact that faults in the resulting research are dramatic and obvious (although almost never noticed). Numerous scholars of high repute have used the paradigm or some variation of it, and many more on editorial review boards and dissertation examination committees have given their approval. Thus, the failings are not the fault of particular individual scholars. The failings must somehow be endemic to the community of scholars who study acculturation. If so, then similar faults should be evident in other versions of fourfold theory. Rudmin and Ahmadzadeh (2001) encountered seven early versions of fourfold acculturation typologies developed before, and independently of, Berry's version currently so popular in psychology. These seven versions were those of Aellen and Lambert (1969), B. B. Cohen (1956), Gaarder (1972), Ichheiser (1949), Saruk and Gulutsan (1970), Taft (1963), and Zak (1973). Thus, the current version is not unique; nor, presumably, are its failings.

The purpose of the present study was to examine the history of acculturation theories, especially those defining different types of acculturation. History is one way to establish enough distance from the social dynamics and academic fashions of a contemporary paradigm to observe its trajectory from the past, through the present, and into the future. History helps us to understand contemporary research, to criticize it, and hopefully to make useful corrections.

History of Acculturation

Antiquity to the 20th Century

Acculturation is an ancient and probably universal human experience. Inscriptions dating from 2370 B.C. show that the Sumerian rulers of Mesopotamia established written codes of law in order to protect traditional cultural practices from acculturative change and to establish fixed rules for commerce with foreigners (Gadd, 1971). There is also archeological evidence from the second millennium B.C. indicating that the Egyptian empire switched from an acculturation policy of separation from Nubians to one of assimilating them (Smith, 1993). In approximately 1780 B.C., the first Babylonian ruler, Hammurabi, wrote an extensive code of law to culturally integrate his Sumerian and Semitic subjects (Wiseman, 1971) and to instruct foreign residents on offenses and punishments:

> The population of Babylonia was of many races from early times and intercommunication between the cities was incessant. Every city had a large number of resident aliens. This freedom of intercourse must have tended to assimilate custom. It was, however, reserved for the genius of Hammurabi to make Babylon his metropolis and weld together his vast empire by a uniform system of law. (Johns, 1910/1991, p. 7)

Old Testament covenant law also was written in an acculturative perspective, giving the Israelites an ethnic identity based on law and establishing norms for intercultural contact with other groups (Jackson, 1995).

Babylon and Israel were conquered by the Persians in the 6th century B.C. and became part of a multicultural empire extending from present-day Libya to India. A major factor in Persia's success was "the liberal and lenient treatment accorded to conquered states, a policy without parallel in the previous history of the middle east" (Munn-Rankin, 1971, p. 656). The Romans' multicultural empire was even more

extensive and enduring, in part as a result of codified law and liberal treatment of local cultures (Grove, 1997). The Roman system of ruling was based not on ethnic identity but on rights of citizenship (Momigliano, 1971). As argued by the Emperor Claudius:

> What was it that brought the [Spartans] and Athenians to ruin but that, strong as they were in arms, they held the conquered away from them as though they were aliens? Far wiser was our own founder Romulus, who fought with many peoples, and made citizens of them, on the self-same day. We have had foreigners to reign over us. (Tacitus, 1909, p. 32)

Indeed, the Greeks were ambivalent about foreigners and their influence on the customs of the nation (ethnos) and on the rationality of civic law (polis) (E. Cohen, 2000; J. M. Hall, 1997). For example, Plato argued that acculturation can cause social disorder and was the first to suggest types of acculturation policies and to describe people who try to isolate themselves as having disordered personalities:

> Now free intercourse between different states has the tendency to produce all manner of admixture of characters, as the itch for innovation is caught by host from visitor or visitor from host. Now this may result in the most detrimental consequences to a society where public life is sound and controlled by right laws, though in most communities where the laws are far from what they should be, it makes no real difference that the inhabitants should welcome the foreign visitor and blend with him, or take a jaunt into another state themselves, as and when the fancy for travel takes hold of them, young or old. On the other side, to refuse all admission to the foreigner and permit the native no opportunity of foreign travel is, for one thing, not always possible, and, for another, may earn a state a reputation for barbarism and inhumanity with the rest of the world; its citizens will be thought to be adopting the ill-sounding policy of exclusion of aliens and developing a repulsive and intractable character. (Plato, 1969, p. 1495)

Rather than complete cultural isolation, Plato proposed minimizing acculturation according to an implicit psychological theory that older people acculturate less than younger people. He argued that people should travel abroad only after 40 years of age. He also recommended that sojourners be restricted to the port district of the city so as to minimize citizens' contacts with foreigners.

The history of Western civilization is a history of acculturation. For example, Celtic and Latin were melded with the Germanic dialects of the Anglo-Saxons, and later with French from Viking Normandy, to create present-day English (Hadley, 1943). The silk trade and the spice trade were both phenomena of acculturation, as was the slave trade (Mullin, 1992). The Renaissance arose from Europeans' acculturative encounters with their own classic past, made possible by the Arabs' and Persians' acculturative adaptations of Greek philosophy and science (Grove, 1997; Murray, 1988). The formation of modern nation-states in Europe has required the acculturative amalgamation of diverse rural and urban peoples (Stewart, 1997).

Acculturation has been particularly salient in the United States because it is a geographically immense nation founded by settlers from a variety of Western European nations, displacing a variety of Native American societies and importing slaves from a variety of African and Caribbean regions. The Iroquois' Haudenosaunee Confederation was founded as early as the 12th century (Grinde, 1977; B. A. Mann & Fields, 1997) and was probably North America's first constitutionally structured cultural pluralism, influencing the authors of the U.S. Constitution: "The American Indians' theory and practice affected Franklin's observations on the need for appreciation of diverse cultures and religions" (Johansen, 1982, p. 84). Nevertheless, in 1792, St. John de Crèvecoeur wrote home to Europe that, in America, "individuals of all nations are melted into a new race of men" (pp. 46–47). Four decades later, DeTocqueville (1835/1945) observed the acculturative processes in the United States and theorized that intercultural knowledge and communication cause assimilation and would eventually result in Americans becoming one people:

> If this tendency to assimilation brings foreign nations closer to each other, it must a fortiori prevent the descendants of the same people from becoming aliens to each other. The time will therefore come when one hundred and fifty millions of men will be living in North America, equal in condition, the progeny of one race, owing their origin to the same cause, and preserving the same civilization, the same language, the same religion, the same habits, the same manners, and imbued with the same opinions, propagated under the same forms. The rest is uncertain, but this is certain; and it is a fact new to the world—a fact fraught with such portentous consequences as to baffle the efforts even of the imagination. (p. 452)

According to the *Oxford English Dictionary*, the word *acculturation* was first used in English text in 1880 by J. W. Powell to describe changes

in Native American languages: "The force of acculturation under the overwhelming presence of millions [of Europeans] has wrought great changes" (p. 46). Another sociologist at the Bureau of American Ethnology, W. J. McGee (1898, p. 243), defined acculturation to be a process by which "devices and ideas are interchanged and fertilized in the process of transfer" and emphasized that hostile groups often acculturate to one another. Powell (1900, p. xxii) agreed that dominant cultures could acculturate to weaker ones: "Conquering tribes take the language of the conquered." Alexander Chamberlain, a linguist and anthropologist at Clark University, documented the acculturative adoption of aspects of Native and Afro-American cultures by the dominant White society (Rudmin, 1990, 1999a). Thurnwald (1932) added the examples of the conquering Vikings adopting Russian language in Kiev, French in Normandy, and Italian in Sicily. In 1943, Devereux and Lock defined "antagonistic acculturation" to be the adoption of the technology of an alien culture but the rejection of its goals and values.

Early Acculturation Psychology

G. Stanley Hall (1904), also at Clark University, was probably the first avowed psychologist to write about acculturation. He argued that first- and second-culture acquisition are similar educational processes. Thus, Native Peoples acculturating to European settlers are akin to adolescent settlers still learning their own culture. He noted that, soon after their 1620 landing in Plymouth, settlers were trying to acculturate the Native Peoples, even though the settlers were the immigrant minority. For example, Harvard University was founded in 1636 as an Indian college (Hall, 1904).

The first full psychological theory of acculturation was proposed in 1918 by social psychologists Thomas and Znaniecki. On the basis of empirical studies of immigrants in Chicago, they theorized that a minority group's culture is defined by shared attitudes and habits, called schemas, adaptive to one's family, ethnic community, and occupation. In America, modernity, defined by flux, efficiency, and multiple memberships in social and occupational groups, is the dominant culture that imposes acculturative pressure on people. Three types of acculturation

arise from personality differences in the two biological dimensions of fear and curiosity. First, individuals with Bohemian personalities are low in fear and high in curiosity, causing them to seek change and to adapt to any social context but at a cost of personality disorganization. By giving up the schemas of the minority culture and always adopting the new, those with the Bohemian-type personality ($-M+D$) can be predicted to assimilate well to the dissociated state of modern, urban society, such that "a multiplicity of disconnected, often radically conflicting characters can coexist in what seems to be one personality" (Thomas & Znaniecki, 1918/1958, p. 1888). Second, individuals with Philistine personalities are high in fear and low in curiosity. Thus, holding fast to social traditions and rejecting modernity, the Philistine-type personality ($+M-D$) becomes nonadaptive in new sociocultural contexts. Finally, individuals with creative personalities have a balance of fear and curiosity and thus seek controlled and coherent change. By maintaining but modifying the schemas of the minority culture to adapt to the dominating pressures of modernity, the creative-type personality ($+M+D$) can "widen the control of his environment" and "adapt to his purposes a continually increasing sphere of social reality" (p. 1856).

The British psychologist, Bartlett (1923/1970), also theorized that psychological dimensions are determinants of acculturation outcomes. As did Thomas and Znaniecki, he argued that unresolved acculturative tensions could lead to "pathological developments of social life" (Bartlett, 1923/1970, pp. 144–145). Bartlett was probably the first to argue that the attitudes of the minority toward the dominant culture are particularly important. If neither culture is dominant, then a blending of cultures is possible; whereas dominance can cause the complete cultural assimilation of one group or can cause chronic "compromise formations" to arise. Another dimensional attitude determining acculturation outcome is whether or not the minority tends to protect its culture or prefers to modify it. Bartlett also argued that cultural similarity facilitates acculturation, especially if emotional meanings can be easily transferred from old practices to new. Finally, Bartlett argued that there are individual differences in personality that are important to consider. For

example, rebelliousness can be predicted to cause cultural change and assimilation.

Acculturation Typologies

Despite the early interest in the acculturation of the dominant society to the minority group, and despite the early arguments that acculturation takes place in the presence of hostile attitudes, most acculturation researchers have presumed, as did Bartlett (1923/1970), that the minority group acculturates to the majority, that the minority group's positive attitudes largely determine acculturation, and that the minority can suffer pathologies arising from acculturation. As was the case with Thomas and Znaniecki (1918/1958), many researchers begin with the idea that the minority culture can be kept or abandoned, leading to theories that acculturation is a matter of adding and subtracting aspects of cultures. As illustrated in Figure 1, the minority culture can be retained (+M) or lost (−M), and the dominant culture can be adopted (+D) or rejected (−D), resulting in (a) −M+D, (b) +M−D, (c) +M+D, or (d) −M−D. Sometimes one of these four generic types is theorized to be impossible or is shown to be empirically unrealistic. Finally, as did Thomas and Znaniecki (1918/1958) and Bartlett (1923/1970), many authors have speculated or provided evidence that some types of acculturation are psychologically or socially beneficial, and others are problematic or pathological.

Acculturation reports with these characteristics are listed in Table 3. These reports were discovered by searching library stacks using Library of Congress subject codes; by searching *Dissertations Abstracts International*, PsycINFO, and the Social Science Citation Index; and by checking the reference citations of other entries in Table 3. Particularly useful were the bibliographies appended to doctoral dissertations. Although the intention was to be inclusively exhaustive in regard to the period covered, this is probably an incomplete list, and it is certainly a simplification of often rather complex and extended theory. The concepts in each column are not synonyms; rather, they share only the gross similarity of conceiving that basic types of acculturation can be defined by addition or subtraction of aspects of cultures or by positive and negative attitudes toward cultures. Table 3 is a catalog of acculturation typologies, not a full

account of them. Detailed comparisons of and debates about these theories are subsequent to first tabulating them in some simplified form.

Table 3 is dense with information and requires some explanation. The acculturation typologies are listed in chronological order. On the far left are author name(s) and publication date. This information is sufficient to locate the citation in the references section of this article. To the right of the date, the percentile number codes the percentage of the preceding table entries that were cited, excluding self-citation. For example, Ross (1920) did not cite Thomas and Znaniecki (1918/1958), but Miller (1924) did cite Ross (1920) and thus knew and acknowledged one third of the previous acculturation typologies. The typology labels (−M+D), (+M−D), (+M+D), and (−M−D) were taken directly from the authors cited. When an author theorized that one of the generic acculturation types is impossible or otherwise failed to define it, the cell has been left empty. When an author described several types of acculturation that fit a single generic form, all of them are listed. The +P or −P notation below each typology label indicates whether the corresponding acculturation types are psychologically beneficial and positive (+P) or distressful and negative (− P) according to either evidence or speculative theory. Some authors did not discuss this issue, and some explained that a type could be both positive and negative.

This history of acculturation typologies stops at 1984, when Berry and his associates stabilized their taxonomy in its present form of assimilation, separation, integration, and marginalization. However, in the rapidly expanding amount of acculturation research since 1984, new fourfold typologies have continued to be proposed (e.g., Bourhis et al., 1997; Coleman, 1995; Hutnik, 1991; LaFromboise, Coleman, & Gerton, 1993; Rudmin & Ahmadzadeh, 2001). Table 3 probably includes most of the acculturation typologies reported between 1918 and 1984 from the fields of psychology, sociology, and anthropology, but the literatures of related social science disciplines, such as Black studies, education, feminist studies, geography, history, law, linguistics, literary criticism, media studies, and religion, were not well searched. Nevertheless, the 68 typologies listed in Table 3 are sufficient for critical purposes.

Table 3
Chronological Summary of Acculturation Taxonomies

Theorist(s) citation	%	Taxonomies of fourfold acculturation typologies			
		−M+D	+M−D	+M+D	−M−D
1. Thomas & Znaniecki (1918)		Bohemian −P	Philistine −P	creative +P	
2. Ross (1920)	0%	accommodation +P	toleration −P	compromise −P	
3. Berkson (1920)	0%	Americanization −P	federation of nationalities −P	community; melting pot +P	
4. Miller (1924)	33%	melting pot −P	segregation −P	indirection +P	
5. Park (1928)	0%	reintegration +P	symbiosis −P	hybrid +P	transition −P
6. Thurnwald (1932)	0%	imitation +P	withdrawal −P	recovery +P	Völkertod −P
7. Hoffman (1934)	0%	no foreign language +P	only foreign language −P	proportionate bilingualism −P or +P	
8. Redfield et al. (1936)	0%	acceptance −P	reaction +P	adaptation −P	
9. Child (1939)	12%	rebel reaction +P	in-group reaction +P	double response −P	apathetic reaction −P
10. Slotkin (1942)	25%	rebellious; marginal		promiscuous; adventurous; detached; acculturated	unorganized; emancipated
11. Senter (1945)	0%	acceptance −P	maintain −P		develop −P
12. Campisi (1947)	18%	successful +P	minimal −P	dilettante −P	
13. Lewin (1948)	0%	negative chauvinism −P	chauvinism −P	double loyalty +P	marginal man −P
14. Ichheiser (1949)	0%	mimicry −P	rejected −P	pseudo −P	denial −P
15. Gordon (1949)	0%	marginal −P	perpetuation −P	affirmative +P	
16. Voget (1951)	0%	marginals −P	native −P	modified −P	
17. Spindler & Goldschmidt (1952)	12%	acculturated +P	native +P	transitional −P	peyote cult −P
18. Eisenstadt (1952b)	0%	insecure transitional −P	traditional +P	secure transitional +P	survivors −P
19. Beals (1953)	17%	acceptance	reaction	syncretism	reformulation
20. Willey (1953)	6%	colony −P	refuge −P	blend +P	
21. Taft (1953)	0%	monism −P	pluralism −P	interactionism −P	+P
22. Simpson & Yinger (1953)	0%	assimilationist −P	secessionist; militant −P	pluralist +P	ambivalent −P
23. Barnett et al. (1954)	32%	progressive adjustment +P	reactive adaptation −P	stabilized pluralism −P	cultural disintegration −P

(*table continues*)

Table 3   (*continued*)

		Taxonomies of fourfold acculturation typologies			
Theorist(s) citation	%	−M+D	+M−D	+M+D	−M−D
24. Spiro (1955)	18%	assimilation −P	solidarity −P	acculturation −P	deculturation −P
25. Zubrzycki (1956)	8%	assimilation −P		accommodation +P	conflict −P
26. Cohen (1956)	12%	assimilation −P	survival −P		indifference +P
27. Richardson (1957)	8%	identification +P	isolation −P	accommodation +P	
28. Dohrenwend & Smith (1957)	12%	reorientation +P	reaffirmation +P	partial reorientation −P	marginalization, reconstitution; alienation −P or +P
29. Glaser (1958)	4%	assimilated +P	segregating −P	marginal −P	desegregating +P
30. Bennett et al. (1958)	7%	idealist −P	constrictor −P		adjustor +P
31. Ausubel (1960)	3%	assimilative −P	resistive −P	adaptive +P	disintegration −P
32. Herman (1961)	0%	over-conformity −P	retreat & withdrawal −P	adjustment & integration +P	vacillation & frustration −P
33. Nash & Shaw (1963)	3%		traditional −P	transitional −P	autonomous +P
34. Glazer & Moynihan (1963)	0%	melting pot assimilation	cultural pluralism	ethnic interest groups	
35. Gordon (1964)	32%	assimilation +P	structural pluralism −P	cultural pluralism +P	marginality −P
36. Fong (1965)	3%	achieved assimilation +P	achieved separation +P	colonial biculturalism −P	semi-acculturated marginalism −P
37. London (1967)	3%	assimilation −P	pluralism −P	integration +P	
38. Nash (1967)	0%		unadapted −P	rapprochement +P	Bohemian −P
39. Lambert (1967)	3%	rejection −P	identified +P	nonethnocentric +P	ambivalent −P
40. Marden & Meyer (1968)	5%	acculturation +P	nativism −P	stabilized acculturation +P	marginality −P
41. Comeau (1969)	3%	advanced acculturation −P	possible acculturation −P	minimal acculturation +P	probable acculturation −P
42. Rabushka (1969)	0%	intermarriage	ethnocentrism	integration	
43. Barth (1969)	0%	assimilation −P	evolution +P		low rank minority −P
44. Saruk & Gulutsan (1970)	0%	majority orientation +P	minority orientation +P	bicultural orientation +P	apathetic orientation +P
45. Rees (1970)	0%	assimilation +P	accommodation −P	integration −P	
46. Sommerlad & Berry (1970)	7%	assimilation −P	rejection	integration; marginal +P	
47. Berry (1970)	7%	assimilation	rejection −P	integration; marginal	

Table 3 (*continued*)

Theorist(s) citation	%	Taxonomies of fourfold acculturation typologies			
		−M+D	+M−D	+M+D	−M−D
48. S. Sue & Sue (1971)	0%		traditionalist −P	Asian American −P	marginal man −P
49. Gaarder (1972)	0%	high status unilingualism +P	low status unilingualism −P	coordinate bilingualism +P	double demi-lingualism −P
50. Berry et al. (1972)	0%	assimilation −P	rejection; segregation +P or −P	integration; colonialism +P or −P	deculturation −P
51. Zak (1973)	0%	negative–positive	positive–negative	positive–positive	negative–negative
52. Hunt & Walker (1974)	2%	cultural assimilation −P	cultural pluralism +P	structural assimilation −P	integration +P
53. Pettigrew (1974)	0%		"Black power" ghetto +P	integration; desegregation +P or −P	typical urban ghetto −P
54. Berry (1974)	0%	melting pot; pressure cooker +P or −P	rejection; segregation +P or −P	integration; paternalism +P or −P	marginality; deculturation −P
55. Berry & Annis (1974)	0%	assimilation	rejection −P	integration	
56. Berry (1976)	4%	assimilation +P	rejection −P	integration −P	deculturation
57. Schumann (1976b)	0%	assimilation	preservation	acculturation	
58. Clark et al. (1976)	13%	types 2, 3, 6 +P	type 5 −P	type 4 +P	type 1 −P
59. Driedger (1976)	2%	majority assimilators +P	ethnic identifiers +P		cultural marginals −P
60. Driedger (1977)	7%	assimilation; amalgamation −P	enclavic pluralism +P	regenerational pluralism +P	
61. Berry et al. (1977)	4%	assimilation −P	rejection −P	integration as multiculturalism +P	deculturation −P
62. Sikand (1980)	13%	assimilation	rejection	integration	
63. Cang (1980)	3%	assimilation −P	traditionalist −P	Asian American −P	marginal man −P
64. Fishman (1980)	0%	uniglossia & unilingualism +P	diglossia & unilingualism −P	diglossia & bilingualism +P	uniglossia & bilingualism −P
65. Taft (1981)	5%	marginality by assimilation −P	marginality by separation −P	marginality by mediation or integration +P	isolation −P
66. Bochner (1982)	9%	assimilation; passing −P	segregation; chauvinistic −P	integration; marginal or mediating −P or +P	
67. Berry (1983)	8%	assimilation −P	rejection −P	integration +P	deculturation −P
68. Berry et al. (1984)	3%	assimilation −P	separation −P or +P	integration +P	marginalization

Note. The acculturative context is a minority culture M in a dominant culture D. Percentages indicate citation of previous scholarship in this list, excluding self-citation. Letter codes note predictions of a positive (+P) or negative (−P) psychological consequence.

Discussion

Linkages to Law

Acculturation has a long history, but this fact has been relatively unnoticed. None of the reports presented in Table 3 considered acculturation theories offered by classic scholars, such as Plato, or made reference to explanations from the antiquity of Western civilization. This would seem not to be a serious failing. However, even this first search of the history of acculturation, admittedly brief and at a surface level, shows that law and acculturation have common origins. The psychological study of acculturation has been diminished and possibly marginalized from useful applications by isolating itself from related scholarship in the legal disciplines.

If law and acculturation were once connected, perhaps there should be more interdisciplinary contact now, especially considering the liberal, activist orientations of many acculturation researchers. Acculturation is integral to several areas in law. First is the matter of minority rights, particularly language rights, which are an issue in nearly every nation. Tully (1995) has argued that collective minority rights will be the greatest constitutional challenge of the 21st century. Related to this issue is the high rate of conviction and imprisonment of minority individuals (e.g., Alexander, 1987; Cahalan, 1979; Hagan & Palloni, 1999), as well as the criminalization of cultural practices such as female circumcision (e.g., Chessler, 1997, Sheldon & Wilkinson, 1998), the spanking of children (e.g., Solheim, 1982), and cockfighting (e.g., Bryant & Li, 1991). Acculturation is central to matters of immigration law and refugee rights in terms of policy advisement (e.g., Berry et al., 1977), analysis of public opinion (e.g., Echabe & Gonzales-Castro, 1996), and testimony in juridical cases (e.g., Freckelton, 1997). To the extent that interethnic wars are acculturative reactions, war crimes arising from these kinds of conflicts represent one more area of acculturation research. Acculturation should perhaps be considered one of the topics of forensic psychology, and acculturation researchers with an interest in applied studies should consider collaborations with lawyers engaged in acculturative law cases and policies.

Citation Isolation

One of the most dramatic findings from this historical survey was the very high degree to which acculturation typologies arise and die in isolation (or possibly due to isolation). The citation percentages in Table 3 show that acculturation scholars, as a group, have not been intent on thoroughly searching the literature and thus building on, or confronting, previous scholarship. New theories tend to be neither extensions and improvements of earlier theories nor winners in competition against other theories. The highest citation rate of previous research was 33%, reached by Miller (1924), who cited 1 of 3 prior typologies; by Barnett, Broom, Siegel, Vogt, and Watson (1954), who cited 7 of 22 prior typologies, and by M. M. Gordon (1964), who cited 11 of 34. On average, however, scholars proposing fourfold typologies cited only 5% of their predecessors, and almost half of the 68 typologies seem to be original reinventions in that they included no reference citations to any of the previous typologies listed in Table 3.

Psychologists using fourfold acculturation theory have been particularly weak in citing similar research, possibly because a psychometric approach to science encourages a rhetoric of individual discovery based on data rather than a broader concern about coherence across the research community. In Table 3, the first eight psychologists listed and their rates of citation of previous typologies were as follows: Hoffman (1934), 0%; Child (1939), 12%; Campisi (1947), 18%; Lewin (1948), 0%; Ichheiser (1949), 0%; Taft (1953), 0%; B. B. Cohen (1956), 12%; and Herman (1961), 0%. All but two of these works were monograph-length manuscripts with larger than usual bibliographies. Berry's first acculturation article was a student project on Australian Aborigines published in *Human Relations* (Sommerlad & Berry, 1970), which then had been the only behavioral science journal carrying an acculturation theme. In that 1970 piece, and in a subsequent article about acculturation in Australia (Berry, 1970), and in a subsequent monograph with a chapter on acculturation (Berry, 1976), Berry failed to cite fourfold acculturation research also published in *Human Relations* (Eisenstadt, 1952a, 1952b; Herman, 1961; Richardson, 1957; Taft, 1953, 1957, 1961, 1963).

Psychologists continued to not seek or cite comparable research even as acculturation became a more established topic and there was more research to miss. For example, Zak (1973) cited none of the preceding 50 acculturation typologies, and Bochner (1982) cited only 6 of the preceding 65.

This kind of systematic citation failure by psychologists is perplexing considering that psychology is the only social science field with two literature indexes, both of which extend back to the field's 19th-century origins (*Psychological Index/Abstracts* and *L'Année psychologique*). Maybe because psychology literature searches are relatively easy, we do not do them well. At least two presidents of the International Association for Cross-Cultural Psychology have pointed out the field's failure to cite and build on prior research. Triandis (1977, p. 10) surmised that the reason cross-cultural psychologists do not attend to such research is that "each psychologist has a tendency to show his creativity by measuring something that few others are measuring." Ten years later, Taft (1987, p. 6) added that "it is typical for previous relevant methods and findings to be entirely ignored" and that "when the attention of researchers is drawn to studies which appear to be related to their current work, they often resort to avoidance techniques which are contrary to the spirit of scientific psychology."

Part of the problem is that authors themselves sometimes do not reveal or critique their own earlier work when making corrections or proposing new theory. For example, in 1967 Nash proposed a new acculturation typology but did not reveal his earlier typology (Nash & Shaw, 1963) or explain how it related to the new one. Similarly, Taft's 1981 presentation of a new fourfold typology focused on marginalization did not cite his earlier more general typology. Berry has changed his meaning of what is now labeled marginalization repeatedly, rarely indicating that changes were being made. As shown in the Appendix, in 1970, *marginality* first referred to bicultural identification and was used to predict the types of acculturation people would prefer. Later that year, three different types of marginality were defined. "Marginality" as a distressed state of mind was to be used as a measure of the maladaptation thought to be caused by certain types of acculturation. Thus, in 1970, marginality predicted modes of accul-

turation, it was predicted by modes of acculturation, and there were hints that it would become a mode of acculturation.

In 1972, Berry et al. proposed a $2 \times 2 \times 2$ taxonomy: Retaining or losing the minority culture was crossed with engaging or rejecting the dominant culture and crossed with whether these conditions were imposed on the minority or freely chosen by them. Imposed loss of both cultures was called *deculturation*, but freely chosen loss of both cultures was said to be "inherently contradictory" and was left unlabeled. In 1974, freely chosen loss of both cultures became possible (though with no mention of the earlier impossibility) and was labeled *marginality*. In 1974, *marginality* was also called *acculturative stress*. In 1976, *marginality* was relabeled as *deculturation*, which had earlier been referred to as the imposed loss of both cultures, and in separate publications in 1976 and 1977 the provisos were added that no one would ever choose freely chosen marginality, as shown by common sense and pilot studies. In 1983, a confounded construct was created by blending the loss of both cultures with the distressed state of mind presumed to be caused by such a loss. This type of acculturation was called *deculturation* if transient and *marginality* if stable and was said to be "an option which is difficult to define precisely, possibly because it is accompanied by a good deal of collective and individual confusion and anxiety" (Berry, 1983, p. 69). In other words, confused constructs are used to measure confused respondents.

Marginalization as a mode of acculturation has usually been defined in the passive voice (Berry, 1983, p. 68; Berry, 1997a, p. 10; Berry et al., 1989, p. 187), leaving it unclear whether or not the minority chose it. Furthermore, the marginalization scale was not operationalized as loss or rejection of two cultures but instead as J. Mann's (1958) measure of marginality (Berry et al., 1989, p. 187), which had earlier been called *acculturative stress*. Two example items about the marginalization of Korean immigrants residing in Canada show that items lack cultural content and that they do not operationalize loss of both cultures: "These days it's hard to find someone you can really relate to and share your inner feelings and thoughts" and "Politicians use national pride to exploit and deceive the public" (Berry et al., 1989, p. 193).

Recently, Berry (2001, p. 618) revived the 1972 and 1974 taxonomies, labeling a minority individual's freely chosen loss of two cultures as *marginalization* and the imposed loss of two cultures as *exclusion.* Again, the earlier versions of this $2 \times 2 \times 2$ taxonomy were not cited, nor was there any mention of the still unrepudiated claims that this kind of marginalization is inherently contradictory and that common sense and pilot studies had shown that no one would choose it.

Clearly, citation failure is not always due to lack of knowledge about prior research. One of the consequences of this kind of systematic citation failure is that it becomes difficult to compare competing theories, neither for their coherence nor for their empirical performance (Taft, 1986), thus contributing to the chronic process of reinvention complained about by Escobar and Vega (2000):

> The absence of solid, empirical literature demonstrating the value of acculturation scales after so many years of development and use is perplexing and discouraging, but even more discouraging is to see many of these scales discarded only to simply reinvent them a few years down the road. (p. 738)

Rudmin and Ahmadzadeh's 2001 study is perhaps the first acculturation study to empirically compare acculturation measures, competing (a) the usual fourfold measures, with and without acquiescence bias, versus (b) independent measures of attitudes toward cultures versus (c) ipsative forced-choice measures. These three methods did not produce similar results, although the latter two were less confounded. Only 1.3% of the respondents endorsed marginalization operationalized as rejection of both cultures ($-M-D$); 36.3% of the same respondents endorsed marginalization operationalized as distress. All respondents who reported agreeing to that kind of marginalization also reported agreeing with the theoretically antithetical construct of integration.

Predicting Pathology or Well-Being

The contemporary fourfold paradigm has attempted to define one type of acculturation as distressful, but the history outlined here shows that there is considerable disagreement about which types of acculturation correlate with negative social or psychological conditions and

which correlate with positive conditions. Plato, who began this tradition, stated that societies favoring cultural separation had "repulsive and intractable character" (Plato, 1969, p. 1495). More than 90% of the typologies included in Table 3 presented theory or evidence indicating that different types of acculturation entail negative, pathological qualities or positive, healthful qualities for the individual or the community. Table 3 shows that the assimilation option ($-M+D$) was negative in 50% of the 68 studies and positive in 32%. The separation option ($+M-D$) was negative in 68% and positive in 24%. The integration option ($+M+D$) was negative in 34% and positive in 53%. The marginalization option ($-M-D$) was negative in 50% and positive in 10%. Some theorists, including Voget (1951, 1952/1967, 1956) and Cang (1980), have argued that all types of acculturation entail difficulties, distress, or other negative qualities.

Although it is now common to argue that biculturalism is positive and most adaptive, many researchers have indicated that biculturalism is maladaptive, for example, that it is existentially inauthentic. Thus, Ross (1920) argued that biculturalism is a compromise that entails the distress of giving up that to which one feels entitled. Redfield et al. (1936, p. 152) argued that "psychic conflict" results from attempts to reconcile different social behaviors and norms, as occurs in bicultural adaptation. Child (1939, 1943/1970) similarly stated that the bicultural option does not resolve cultural conflicts or end frustrations and is thus more distressing than a commitment to one culture or the other. Ichheiser (1949) more specifically argued that bicultural behavior will cause the majority to make misattributions about the minority, as well as cause the distress of inhibiting and masking one's core personality. As with Ichheiser, Glaser (1958, p. 34) argued that the bicultural person is marginalized and "may have guilt feelings and fears of discovery as a result of duplicity and inconsistency in identifying himself to others." G. Spindler and Goldschmidt (1952, p. 80) argued that bicultural Natives,

> alienated as they are from the cultural symbols of their ethnic past and at the same time not having internalized the symbols which constitute the value system of Western society, will exhibit more symptoms of personality disorganization than members of groups

closely identified with the symbols of either of these culture types.

Dohrenwend and Smith (1957, 1962) similarly saw the bicultural condition to be but a partial solution.

Nash and Shaw (1963) argued that bicultural individuals have broad cultural and emotional repertoires and social competencies, but at the cost of inauthenticity, crippling cultural attachments, and insecure self-identity. This is akin to the conflicted biculturalism that Fong (1965) found among people who consciously rejected assimilation but responded emotionally in a manner similar to those who had assimilated. S. Sue and Sue (1971) viewed the bicultural condition as requiring a realistic but radical creation of a new self-identity entailing political struggle and conflict with the dominant society, with traditionalist parents, and with assimilationists. Bochner (1982) argued that biculturalism, at the individual level, results in people becoming marginal if the salient norms of the two cultures are incompatible. For example, the dominant religions of Western civilization (Judaism, Christianity, and Islam) are all mutually exclusive, often hostile, and incapable of bicultural integration.

Others have argued that biculturalism is unstable because of power differences. For example, Campisi (1947) stated that selective biculturalism is not tenable given the coercive pressures of the dominant society. Rees (1970) also argued that bicultural integration is inherently unstable because of power imbalances. Barnett et al. (1954, p. 990) contended that stabilized pluralism requires some form of hierarchical relationship as well as cultural institutions to "ameliorate the stresses of interethnic situations" and to "legitimatize the status system of the ethnic community in which one may expect to find transplanted important aspects of the stratification criteria of the dominant society." Berry et al. (1972) theorized that biculturalism represents a kind of colonialism if the minority seeks integration but lacks control of its own institutions. In 1974, Berry labeled this "paternalism." Pettigrew (1974, p. 17) argued that desegregation is a bicultural situation without autonomy and thus "involves little cross-racial acceptance and, often, patronizing legacies of White supremacy."

Perhaps more surprising than arguments that biculturalism (+M+D) is bad are arguments that loss of both cultures (−M−D) is good. The most common argument has been that detachment from culture is a condition of maturity, independence, and freedom. For example, B. B. Cohen (1956) presented empirical evidence that the alternatives of assimilation (−M+D) and minority culture survival (+M−D) are both forms of ethnocentrism, because they entail antidemocratic, authoritarian tendencies to reject other cultures; whereas cultural indifference (−M−D) entails no cultural assertiveness or affiliation. Glaser (1958) also theorized that desegregating individuals (−M−D) are autonomous, without cultural identification, and best typified by cosmopolitan people.

Bennett, Passin, and McKnight (1958, p. 189) argued that the adjustor (−M−D) is free from "fluctuating or conflicting ideals, cultural identification, or strong national loyalties." Nash and Shaw (1963, p. 260) also stated that autonomous individuals (−M−D) have secure self-identities detached from crippling cultural attachments, such that they can "maintain an identity in a changing situation with a minimum expenditure of energy on psychological defensive measures." Mol (1963, p. 176) argued that "predominant features of our modern Western world, such as rationality, objective observation, efficient management, [and] logical calculation, require marginal attitudes." According to Hunt and Walker (1974, pp. 8–9), their concept of integration (−M−D) entails "denial of any social obligation to preserve ethnic distinctions," such that "salient attachment to the ethnic group has disappeared." However, Dohrenwend and Smith (1957, p. 35; 1962) conceived "the creation, by one group, of rules which existed in neither culture prior to contact" as a kind of positive cultural reconstitution (−M−D). Finally, Saruk and Gulutsan (1970) found that children from families with an apathetic acculturation orientation (−M−D) exhibited above average school performance.

These various theorists, and presumably their editors and readers, found such arguments coherent if not persuasive. That a prediction seems sensible is not evidence that it is. Predictions of acculturation correlating with psychopathology or with well-being have rarely been empirically demonstrated in a rigorous way. The evidence usually consists of selected case studies, inter-

pretive ethnographic or projective data, or non-significant correlations among measures of confounded constructs. The frequency of these predictions suggests that they are an important concern. Yet, they remain a rich, untouched ground for empirical research that would accurately operationalize competing predictions and use sound psychometrics based on multiple measures and replication. The theories underlying predictions of pathology might be further validated by intervention studies that operationalize treatments based on the theories by which the predictions were proposed. For example, if integration is theorized to reduce distress, then researchers should experimentally induce integration attitudes and determine whether distress decreases.

The Melting Pot as a "Straw Man"

Another of the obvious but dramatic findings of the history outlined here is that, within the arena of the social sciences, there is a long established and strong tradition of conceiving that many types of acculturation other than assimilation are possible for minorities. Table 3 shows that it is a mistake to argue that early theories attempted to limit the concept of acculturation to just processes of assimilation (Berry, 1997a, p. 7) or to just a choice between traditional lifestyles and modernization (Berry et al., 1989, p. 186). It is, and has been, a weak argument to give merit to a new acculturation theory merely because it opposes the purported myth of "melting pot" assimilation. However, within the arena of popular American political rhetoric, the melting pot metaphor retains considerable power, as exemplified by Barone (2001), Bork (1996), Limbaugh (1992), and others. But in that arena, studies of the psychosomatic problems of ethnic minorities and reports of correlations between attitude scales have little rhetorical force.

The melting pot concept has been misunderstood and misused. As presented in Berkson's 1920 review of acculturation theory, the melting pot metaphor came from the pen of a Jewish playwright, Zangwill (1909), although possibly following the suggestion of St. John de Crèvecoeur (1792). The melting pot was conceived not as assimilation but as the mechanism for creating a new Nietzschean "superman." According to Berkson (1920/1969, p. 73), the amalgamation of immigrant cultures should take place without damaging morale or self-respect, but it would nonetheless cause the "disappearance of divergent ethnic strains and cultures within the unity of American life." Berkson (1920/1969) juxtaposed the melting pot $(+M+D)$ against Americanization $(-M+D)$, defined as assimilation to the dominant Anglo-Saxon society, and against the separation of ethnic groups in a federation of nationalities $(+M-D)$.

However, the melting pot was only one metaphor for cultural integration. Berkson himself favored the metaphor of "community" $(+M+D)$, in which minorities live interspersed with others, engaging in the economic, political, and social life of the society and yet maintaining their minority heritage through deliberate family and school educational endeavors. Such "double allegiance . . . is greater than twice a single allegiance [since] knowledge of an additional language and culture" results in a richer personality and prevents ethnocentrism (Berkson, 1920/1969, p. 102). Subsequent theories of acculturative integration have not advanced Berkson's early work but only reinvented it.

Previous acculturation typologies, even when cited, are sometimes misunderstood. For example, Sommerlad and Berry (1970) cited London (1967) as the source of their concept of "integration." According to London, integration would result in a new "cultural amalgam" (p. 340), very much in the melting pot tradition. However, Berry (1992, 1994) has argued that integration is not cultural blending. London (1967) used the United States as the archetype of successful integration policies, lamenting that "Australian integration may not be able to duplicate this American model" (p. 344). However, Berry (1983, 1997a) has proposed that integration is an alternative to the American model of the melting pot. Also, LaFromboise et al. (1993) have identified five different kinds of biculturalism (assimilation, acculturation, alternation, multiculturalism, and fusion) that Berry (1997a) has cited as similar to bicultural integration.

Myriad Labels and Meanings

These kinds of confusion show that one of the consequences of ignoring history, repeatedly reinventing theories, and not maintaining litera-

ture links is that words become confounded and acquire different, sometimes contrary meanings. Table 3 shows that all four of the generic types of acculturation have been labeled "marginality" or "marginalization." As is now common practice, many researchers have labeled the diminution of both cultures ($-M-D$) as a variant of "marginal," including Dohrenwend and Smith (1957), M. M. Gordon (1964), Fong (1965), Marden and Meyer (1968), S. Sue and Sue (1971), Berry (1974), Driedger (1976), and Cang (1980).

However, the bicultural condition ($+M+D$) has also been labeled as "marginality." Glaser (1958, p. 34) argued that cultural contact leads to bicultural competence, such that a person "favors a pluralistic society in which he can feel identified with several ethnic groups"; this flexibility results in the person being marginal in comparison with those who are spontaneously unicultural. Sommerlad and Berry (1970, p. 24) cited Glaser (1958) in labeling as "marginal" people who have bicultural ethnic identifications, and their data showed that those with dual ethnic identifications were neither assimilationist nor integrationist. Taft (1981, p. 59) also argued that biculturalism defines marginality: "The common element in all marginal situations is that the person is in contact with two (or more) distinguishable groups (or societies)." He differentiated two types of bicultural marginality, one being the mediating person with dual cultural memberships and the other being the integrated person maintaining an ethnic identity while participating in a plural society. Bochner (1982) argued that bicultural marginal individuals alternate between two cultures that are perceived as having salient but mutually incompatible norms. For example, attempting to practice both Christianity and Islam would make a person marginal to both (Rudmin & Ahmadzadeh, 2001).

Unicultural types of acculturation have also been labeled as marginal, depending on the perspective taken. Slotkin's (1942) study of Jewish–Gentile intermarriages revealed that people who identify with the dominant group and have adopted its culture will view themselves as marginal to the dominant group ($-M+D$) if they do not achieve acceptance, for example, by intermarriage. A. I. Gordon (1949) also studied Jewish immigrants in the United States and labeled them as marginal to their minority group

($-M+D$) if they sought assimilation and disliked Judaism to the degree that they were ignorant of their Jewish heritage. Thus, from the assimilating persons' perspective, if they are not accepted they are marginal to the majority group, and from the minority group's perspective, the assimilating persons' rejection of minority culture makes them marginal to the minority group.

Voget's (1951, 1952/1967, 1956) studies of Native Americans combined these two perceptions of assimilationists as marginal; he described the "American-marginal group" ($-M+D$) as comprising those who cut themselves off from the Native culture but are not accepted by the dominant culture: "Their marginality derived in part from their own activities and from local discrimination by whites familiar with their ancestry" (Voget, 1951, p. 221). According to Taft (1981, p. 60), "marginality by assimilation" ($-M+D$) is represented by "the situation where a person is oriented toward joining the majority group but has not yet crossed the formal boundary to become a member, and may not in fact be able to do so because of barriers." Taft (1981, p. 60) argued that "marginality by separation" ($+M-D$) "describes the form of cultural and structural pluralism (apartheid) in which communities are in physical contact with each other but psychologically separate."

Table 3 shows that it has been relatively common for terms to be used with different meanings. For example, Thomas and Znaniecki in 1918 labeled as "Bohemian" ($-M+D$) those who lack cultural inertia and are quick to assimilate to modernity. This term went unused until Nash in 1967, defined "Bohemian" ($-M-D$) as the type of sojourner who actively rejects his or her home society yet remains on the margins of the host society. According to Ross (1920), "accommodation" ($-M+D$) meant the conversion of a culture by processes of imitation. Zubrzycki (1956) argued that "accommodation" ($+M+D$) meant the "readiness to accept institutions of the host society combined with special efforts to maintain ethnic identity" (p. 175), which is nearly identical to Berkson's (1920/1969) concept of community and Berry's (1970) concept of integration. Richardson's (1957) bicultural "accommodation" ($+M+D$) meant conformity to the majority group's behavior, dress, and other externalities while maintaining deep underlying attitudes.

According to Rees (1970), however, "accommodation" ($+M-D$) was a form of cultural pluralism in which the minority makes minimal adjustments to the majority.

It is probably not possible to standardize the vocabulary of acculturation theory, because the topic extends across academic disciplines, across decades, and across national boundaries. Taft (1981, p. 343), in discussing acculturation research in different countries, stated that "the conceptualization and methods are so variant that it is almost impossible to integrate them, whether intuitively or by some objective procedure such as a formal meta-analysis." Also, acculturation is discussed, in lay language, in the political debates of most if not all nations. For example, "integration" in U.S. political culture refers to "placing people from two or more ethnic groups into the same institution [which is] very different from the meaning that Berry wishes to convey" (Triandis, 1997, p. 56). In European political culture, "integration" seems to mean assimilation. Though standardized terminology is probably now not possible, this history recommends that scholars should at least cease coining new terms and should, to the degree possible, use existing terminology and account for its origins and heritage.

Lost Leads and Lost Warnings

Another of the consequences of acculturation research proceeding ahistorically is that many leads to good ideas were lost and warnings went unheard and unheeded. For example, in a review of Scandinavian anthropological literature, Barth (1969) theorized that cultures define themselves by the boundaries they mutually maintain with each other. Cultures cannot be described by values, beliefs, norms, practices, and other traits, as is usually presumed in acculturation research. The semiotics of the boundary between two cultures must be understood before the crossing of that boundary can be understood.

Barth (1969) also argued that acculturation is directed by agents of change within the minority group, who choose for themselves one of three basic strategies:

> (i) they may attempt to pass and become incorporated in the pre-established industrial society and cultural group; (ii) they may accept a "minority" status, accommodate to and seek to reduce their minority disabilities

by encapsulating all cultural differentiae in sectors of non-articulation, while participating in the larger system of the industrialized group in the other sectors of activity; (iii) they may choose to emphasize ethnic identity, using it to develop new positions and patterns to organize activities in those sectors formerly not found in their society. (p. 33)

The leaders' choices for themselves have unintended consequences for their group. If the leaders choose the first strategy of assimilation ($-M+D$), the group becomes denuded of diversity and ends up as a culturally conservative, inarticulate, low-rank minority ($+M-D$) in the larger society. The second strategy entails leaders choosing to protect aspects of the minority culture ($+M-D$) but without articulating intercultural boundaries, which results in the group's eventual assimilation ($-M+D$). The third strategy entails the leaders integrating ethnic identities and new activities ($+M+D$), which results in a revitalized and robust minority culture ($+M-D$). Barth's theory argues that fourfold psychometric approaches fail because they conceive cultures to be definable by traits, because they treat all minority members as equally influential on acculturation outcomes, and because they presume that there are simple mechanisms mapping individual choices to collective outcomes.

Others have also argued that acculturation choices may not lead to the intended outcomes because the actions required to achieve a choice can subvert that choice. Considering the acculturation of Chinese in the United States, D. W. Sue and Sue (1972, p. 638) argued that traditionalists ($+M-D$) "resist assimilation by maintaining traditional values and by associating predominantly with other Chinese." However, one Chinese value is that of finding self-worth in one's parents' admiration of one's educational and occupational success, which requires mastery of the dominant culture's language and behavioral norms. Thus, the traditionalist is "unable to fully isolate himself from members of the host society" (S. Sue & Sue, 1971, p. 39), resulting in involuntary or inadvertent acculturative integration ($+M+D$). The antithesis of this traditionalist-cum-integrationist is the Asian American ($+M+D$), a realist who also wants to preserve Chinese values but who believes that this requires confronting racism and changing the dominant society's attitudes and laws. This in turn requires political

activism, which requires solidarity with other Asian groups, which creates conflict with parents and traditionalists. These kinds of paradoxical processes in acculturation have been untouched by psychometric questions about cultural preferences.

Many researchers' warnings about problems in the study of acculturation have been left unread on the library shelves. For example, Lewin (1948) warned that the social fields of individual migrants are too much in flux to make it easy to accurately measure acculturation attitudes. Glazer and Moynihan (1963) warned that people are usually not conscious of their ethnic identity and cannot reliably answer what it is. To date, there have been few, if any, test–retest reliability studies of acculturation scales. Sommerlad and Berry (1970) and Marden and Meyer (1968) warned that binational identifications, such as "French-Canadian" or "Greek-American," are not indicators of bicultural integration. Rabushka (1969) argued that it is a methodological mistake to use attitudes as a measure of acculturation and as a cause of acculturation.

Miller's 1924 warning was probably the first, the strongest, and the worst one to have missed. He argued that social science is at risk when it studies relations between cultural groups:

> The scientist as a human being, however, lives like other people as to his social relations, and he constantly reverts to the methods which are characteristic of unscientific man, namely trying to reduce all particulars to universals. But since he has been trained in the scientific method, he now defines his conclusions in scientific terms. This is one form of pseudo-science [and] no one can have the presumption to think that he is entirely free from the danger of falling from the scientific to one of the other positions at any time. One cannot but feel some consternation that, what might be called the "middle-class mind", lying between science and superstition, rushes in to solve with scientific assurance some of the most complex problems, the "solution" being generally in line with the traditions and prejudices of their class. (Miller, 1924, p. xiv)

This history has shown that acculturation researchers, as a class, have had a tendency to violate their own standards of science and to collectively have difficulty seeing such violations. There is some kind of sociology of science phenomenon underlying this situation. It may be, as Miller warned, that social class biases cause "common sense" rather than logic and scientific methods to direct research judgments. Berry (1974, p. 20) hypothesized that

supposedly value-free social scientists would prefer to find evidence favoring integration because it is familiar and accords with liberal ideals of free choice. In a large sample of Canadians of mixed ethnic backgrounds, preferences for multicultural integration were positively correlated with education, income, and status (Berry et al., 1977, p. 343).

Misuse of Dimensional Data

This history has also opened the possibility of understanding some of the psychometric confusions that arise in acculturation research. The major failing stems from mixing a dimensional model with a distinctive features model, misusing each model, confusing a priori and empirical categories, and then masking all of this with faulty measures and loose use of language. The discussion in this section focuses first on the dimensional model and then on the distinctive features model. The matter of bad measures and misused language has been covered by Rudmin and Ahmadzadeh (2001).

If acculturation scholarship had followed its literature, it would have found the empirical studies of Voget (1951, 1952/1967, 1956), L. Spindler and Spindler (1958), or Clark, Kaufman, and Pierce (1976), all of whom clustered individuals' data in dimensional space and thus defined different types of acculturation by empirical rather than a priori criteria. Figure 2 shows four graphic renderings of hypothetical data in two-dimensional space. The dimensions are $-M \leftrightarrow +M$ and $-D \leftrightarrow +D$, representing attitudes toward the two cultures or representing degrees of lacking or possessing the practices, beliefs, or values of the two cultures. The first graph depicts how the data might be imagined as idealized by the fourfold constructs. The participants' responses would be unambiguous and would empirically fit an a priori decision that only one type of acculturation can appear in each quadrant. The second graph depicts fourfold data distributed as a cloud of responses biased toward biculturalism rather than centered on indifference, as represented by the origin of the graph. This seems a plausible account of some of the data generated by fourfold research discussed in the introduction and by Rudmin and Ahmadzadeh (2001).

These two graphs illustrate how the imposed, a priori conception of the four types of accul-
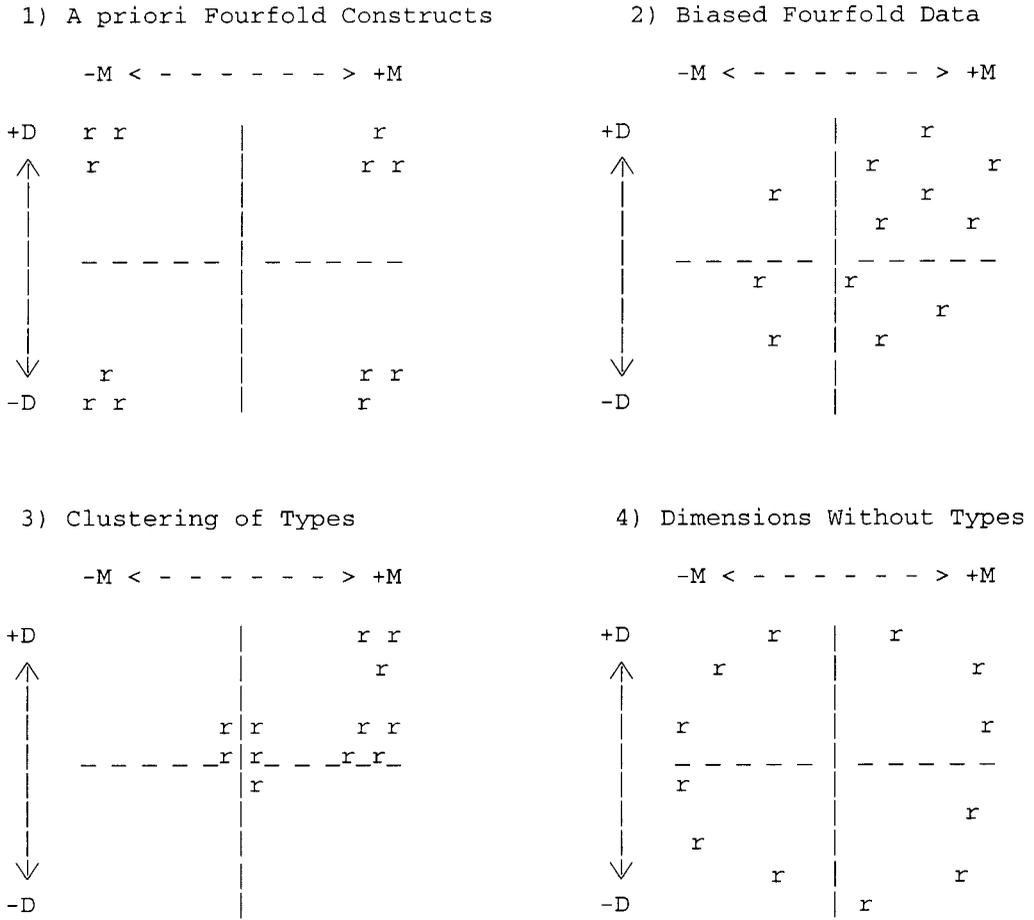
```
1) A priori Fourfold Constructs          2) Biased Fourfold Data

    -M < - - - - - - > +M                    -M < - - - - - - > +M

+D   r r              r                +D                |     r
 /\    r              r r               /\               |  r        r
 |                    |                  |          r    |  r
 |                    |                  |               |    r     r
 |    - - - - - | - - - - - -            |    - - - - - | - - - - -
 |              |                        |           r  | r
 |              |                        |               |       r
 |              |                        |               |
 \/     r       |      r r               \/         r    | r
-D    r r       |       r               -D               |


3) Clustering of Types                   4) Dimensions Without Types

    -M < - - - - - - > +M                    -M < - - - - - - > +M

+D              |       r r            +D         r    |  r
 /\             |        r              /\     r       |
 |             |                        |             |        r
 |             |                        |    r        |
 |      r|r        r r                  |             |           r
 |    _ _ _ _ _r|r_ _ _r_r_             |    - - - - | - - - - -
 |            |r                        |    r        |
 |             |                        |             |        r
 |             |                        |             |
 \/            |                        \/       r    |     r
-D             |                       -D             | r
```

Figure 2. Alternative schemas for illustrating types of acculturation, showing the hypothetical responses (r) of 12 individuals in a two-dimensional space defined by a minority culture dimension −M ↔ +M and a dominant culture dimension −D ↔ +D.

turation in Graph 1 can be incompatible with the data illustrated in Graph 2. The faulty data in Graph 2 can be easily averaged into mean scores according to the conception in Graph 1, even though the data show that conception to be misconceived and unrealistic. The presentation of the fourfold acculturation constructs has usually included a caveat claiming that there is no problem conceiving the constructs to be based on dichotomous categories as well as on continuous dimensions (Berry, 1984a, p. 12; 1984b, p. 357; 1992, p. 72; 1994, p. 132; 1997a, p. 9; Berry et al., 1989, p. 187; Berry, Trimble, & Olmedo, 1986, pp. 306–307). As shown in Graphs 1 and 2, there is definitely a problem.

Graphs 3 and 4 illustrate correct ways to conceive dimensional data as cluster types or as only dimensions, both of which the usual fourfold paradigm would be unable to admit and unable to express. Graph 3 depicts the clustering of responses that thus define different types of acculturation. The number of different types depends on the number of identifiable clusters, ranging from none to many but certainly not fixed at four. There is no a priori requirement that types of acculturation be distributed one per quadrant. Graph 3 depicts three types of acculturation, showing an indifferent type at the origin and two types of biculturalism, one a balanced biculturalism and one an unbalanced bi-

culturalism favoring the minority culture. In the history of acculturation research, Slotkin (1942) identified eight acculturative clusters. L. Spindler and Spindler (1958) found five acculturative clusters and graphically displayed two types of assimilated $(-M+D)$ individuals.

There is likely to be a cluster of responses at the intersecting origin, as shown in Graph 3, identifying those respondents who have no reliable opinion or are otherwise indifferent to the dimensions at issue. Acculturation research has rarely, if ever, overtly allowed a category of respondents who have no opinion, which would certainly be a very large category if responses within one or two standard errors of the scales' null midpoints were classified as "no preference." It is also possible to have cluster types at the ends of an axis, indicating indifference to the other axis. Positive correlations between fourfold scales are evidence that respondents are giving contradictory answers concerning one culture or both, indicating indifference (Rudmin & Ahmadzadeh, 2001).

Graph 4 depicts the data when, in fact, there are no distinct types of acculturation but only dimensions of acculturation. The data distribute rather evenly around the periphery of the two-dimensional space without clustering. Rapoport and Fillenbaum (1972) have explained that it is an empirical decision driven by data, not by a priori misconceptions, as to whether analysis and interpretation should be based on clustering responses or on analyzing dimensional variables when no clusters are evident in the data.

Lack of Logic

The distinctive features method of defining types of acculturation has been misused more, and by many more people, than has the dimensional method. Distinctive features refer generically to dichotomous classification systems that attempt to differentiate types by their possessing or lacking specified attributes, in this case cultural attributes. Perhaps the most common and the most serious failing of the acculturation theorists listed in Table 3 is that none of them noticed that defining acculturation types by two cultures, two attitudes, two identities, or two languages does not result in 4 possible types but 16. It is evidently easy to think that a choice between two options becomes a choice between this, that, both, or neither: hence, $(-M+D)$,

$(+M-D)$, $(+M+D)$, or $(-M-D)$, now commonly called assimilation, separation, integration, and marginalization. But that is all an error in thinking.

The first Euler diagram in Figure 3 shows that two cultures in contact define four logical spaces and that there are 16 possible combinations of these spaces, including the null condition. As shown in the Boolean expressions on the right, 16 different types are defined by systematically applying the logical operations of negation, intersection, and union to the two cultures in question. In a more generalized form, Euler logic and Boolean logic both prove that the number of possible types is 2 to the 2^m power, where m is the number of defining features (Watanabe, 1969, 1986). Thus, if acculturative types are defined by choices of two cultures, then $m = 2$, and there are $2^4 = 16$ logically defined types. If acculturative types are defined by choices of three cultures (Birman & Tyler, 1994) or defined by choices of two cultures and by whether the choices are freely made versus imposed (Berry, 1974, 2001), then $m = 3$, and there are $2^8 = 256$ logically defined types of acculturation.

To conceive of only four types, as shown in the second Euler diagram, requires two implicit but false presumptions: (a) The universe of cultures is limited to two cultures, and (b) the intersection of two cultures is an empty set; in other words, no two cultures have anything in common. In other words, because the fourfold typologies fail to embed the two cultures in a universe of cultures and because they misinterpret natural-language "and" to always mean conjunction by union ($\cup$, OR) but not conjunction by intersection ($\cap$, AND), they misconceive that there are only four types of acculturation. Another consequence of these errors is that the fourfold models do not allow the possibility that a person is indifferent to one or both of the cultures. Another consequence of these errors in logic is that the fourfold models mistakenly presume that rejection of two cultures results in a null condition of no culture, hence, marginalization. However, a correct operationalization of the construct shows that rejection of two cultures may imply a preference for some other unspecified cultural option as shown by the following marginalization items about U.S.–Turkish acculturation: "I prefer beliefs other than Islam or Christianity" and "Cuisine is bet-

I. Sixteen possible types defined by Boolean logic:

```
u u u u u u u u u u u u u u u       Combinations    Boolean
u                           u       of Subspaces    Notation
u                           u
u   M M M M M M M M         u   S     a) 1          M∩D
u   M               M       u   A     b) 2          M∩D
u   M       D D D DMD D D D u   I     c) 3          M∩D
u   M       D       M       D u M     d) 4          M∩D
u   M   1   D       M   2   D u I     e) 1&2        (M∩D)∪(M∩D)
u   M       D   3   M       D 4 u S,I f) 1&3        M
u   M       D       M       D u S,M   g) 1&4        D
u   M M M MDM M M           D u A,I   h) 2&3        D
u           D               D u A,M   i) 2&4        M
u           D D D D D D D D   u I,M   j) 3&4        (M∩D)∪(M∩D)
u                           u   I     k) 1&2&3      M∪D
u                           u   I,M   l) 1&2&4      M∪D
u u u u u u u u u u u u u u u   S,I   m) 1&3&4      M∪D
                                A,I   n) 2&3&4      M∪D
                                I,M   o) 1&2&3&4    M∪M = D∪D
                                M     p) null       ∅
```

II. Four possible types defined by fourfold typologies:

```
M M M M M M M MD D D D D D D D     Combinations    Boolean
M             MD            D      of Subspaces    Notation
M             MD            D
M             MD            D  S     a) 1          M∪D = M = D
M       1     MD       2    D  A     b) 2          M∪D = M = D
M             MD            D  I     c) 1&2        M∪D = M∪D = M∪M =D∪D
M             MD            D  M     d) null       ∅ = M∩D = M∩M = D∩D
M M M M M M M MD D D D D D D
```

Figure 3. Euler diagrams of acculturation of minority culture M and dominant culture D within a universe of cultures u, creating 4 subspaces and 16 types of preferences or identities. Negation (NOT) is marked by underlining; Union (OR) is marked by ∪; Intersection (AND) is marked by ∩. A = **A**ssimilation; S = **S**eparation; I = **I**ntegration; M = **M**arginalization.

ter elsewhere than Turkey or the USA" (Rudmin & Ahmadzadeh, 2001, p. 45).

The confusion of labels in Table 3 can be explained in part as a consequence of the faulty logic depicted in the second Euler diagram. For example, once the logical universe of cultures has been limited to two cultures and logical intersection is not allowed, separation and assimilation can both be labeled by reference to only one culture, as shown by the Boolean notation on the right-hand side of Figure 3. Thus, separation can be labeled as "M∪D" but also as M or as D, because "minority culture" and "*not* the dominant culture" refer to the same thing. For example, separation as (+M) has

been termed *in-group reaction* by Child (1939), *maintain* by Senter (1945), *perpetuation* by Gordon (1949), *native* by Voget (1951), *traditional* by Eisenstadt (1952b), *solidarity* by Spiro (1955), *identified* by Lambert (1967), *minority* by Saruk and Gulutsan (1970), *preservation* by Schumann (1976a, 1976b), and *ethnic identifiers* by Driedger (1976). These labels are all positive toward the minority culture and signify nothing about the dominant culture.

In a faulty logic, separation can also be defined by "NOT the dominant culture" (−D). Thus, it has been called *withdrawal* by Thurnwald (1932), *minimal* by Campisi (1947), *rejected* by Ichheiser (1949), and *rejection* by

Sommerlad and Berry (1970). Similarly, assimilation has been labeled "*not* minority culture," for example, *rebel* by Child (1939), *negative chauvinism* by Lewin (1948), *marginal* by Slotkin (1942), and *rejection* by Lambert (1967). Assimilation can also be labeled as (+D) using words that signify nothing about the minority culture, for example, *Americanization* (Berkson, 1920/1969), *imitation* (Thurnwald, 1932), *acceptance* (Senter, 1945), *identification* (Richardson, 1957), and *overconformity* (Herman, 1961).

In a logical universe of only two cultures, $\underline{M}$ means D and $\underline{D}$ means M, such that integration can be expressed as "$\underline{M} \cup \underline{D}$," meaning "NOT M OR NOT $\underline{D}$." Hence, integration has been termed *transitional* by G. Spindler and Goldschmidt (1952), *marginal* by Glaser (1958), and *nonethnocentric* by Lambert (1967). Integration can also be expressed as "$M \cup \underline{M}$" or as "$D \cup \underline{D}$," meaning a culture OR its negation. For example, the concept of *compromise* by Ross (1920) refers to the minority culture or what is not the minority culture, and the concept of *Asian American* by S. Sue and Sue (1971) refers to the dominant culture or what is not the dominant culture. Similarly, marginalization can be expressed as "$M \cap \underline{M}$" or as "$D \cap \underline{D}$," meaning a culture AND its negation; for example, the concept of *denial* by Ichheiser (1949) refers to having minority cultural character (+M) but concealing or denying it (−M).

A fourfold model can correctly arise only if it is uniculturally conceived. Thus, thinking of only one culture, M, there are $2^2 = 4$ logically defined types of acculturation: (a) minority culture (M), (b) NOT minority culture ($\underline{M}$), (c) minority culture OR NOT minority culture ($M \cup \underline{M}$), and (d) minority culture AND NOT minority culture ($M \cap \underline{M}$). The dominant culture can also define four acculturation categories: D, $\underline{D}$, $D \cup \underline{D}$, and $D \cap \underline{D}$. If these two fourfold conceptualizations become confused with each other, then it is easy to misconceive that $D = \underline{M}$, such that *assimilation* defined as D equals *negative chauvinism* or *marginalism* defined as $\underline{M}$. Furthermore, $M \cup \underline{M}$ defines the universal set, meaning everything, in this case, all cultures in the world. But in confused logic, $M \cup \underline{M}$ becomes $M \cup D$, and all cultures become two cultures. Similarly, $M \cap \underline{M}$ defines the null set, the empty set, the set of inherent contradiction, which means no one can be included in this category. However, if by confusion $M = \underline{D}$, then $M \cap \underline{M}$ becomes $\underline{D} \cap \underline{M}$, and an impossibility becomes a set of marginalized people.

In Figure 3, the first Euler diagram displays the correct logical configuration for two cultures in contact, resulting in 16 types of acculturation. Several things should be noted. One is that the fourfold labels of assimilation, separation, integration, and marginalization do not well fit a logical model. Each of these labels covers several distinct types of acculturation, as well as several with multiple labels. For example, Type b assimilation entails rejection of aspects of the minority culture shared with the dominant culture; whereas Type h assimilation is less severe and includes aspects of the minority culture shared in common with the dominant culture. Because of this inclusion, however, Type h is also a kind of weak integration, something that might be called *assimilation biculturalism* (LaFromboise et al., 1993). Figure 3 shows that there are many forms of bicultural integration, including *fusion biculturalism* (Type c) and *alternation biculturalism* (Type e) (LaFromboise et al., 1993).

The logically complicated types of acculturation might become more comprehensible with an historical example. In 1905 Japan occupied Korea, and in 1910 annexed it and started a program of forced assimilation (Nahm, 1993; Yi, 1984). What were the acculturation options for the Koreans? Limiting questions about culture to religion, the options were as follows: (1) uniquely Korean Tonghak religion, renamed Chondogyo in 1905 (Kim, 2001; Oh, 1977); (2) uniquely Japanese Shintoism; (3) Buddhism, a common religion widely practiced in both Korea and Japan for more than a thousand years; or (4) a religion from another culture, in this case American Protestant Christianity (Y.-B. Kim, 2001). Tonghak, meaning "Eastern Learning," arose in the 19th century to oppose Westernization and Christianity. After the Japanese military occupation, both Chondogyo and American Protestantism became expressions of Korean nationalism. For example, the 1919 March First Independence Movement was led by a committee of 33 Korean patriots of whom 16 practiced Christianity, 15 Chondogyo, 2 Buddhism, and none Shintoism (Nahm, 1993; Oh, 1977).

Type a acculturation is defined by $M \cap \underline{D}$, which means "what is minority culture AND is NOT dominant culture." In the Korean exam-

ple, this is a severe kind of separation favoring Chondogyo and rejecting Buddhism because it is shared in common with Japan. Type g acculturation is defined by $\underline{D}$, which means "anything but the dominant culture." Fourfold terminology is incapable of correctly labeling this logical option, because it entails rejecting the dominant culture, making it a kind of separation, but it also entails rejecting aspects of the minority culture and accepting aspects of other cultures, which would make it a kind of marginalization or possibly integration, if that term were used to mean multicultural contact with other cultures (plural) (Berry et al., 1977). In Korean history, in fact, many patriots, such as Syngmon Rhee (Lee, 2001), renounced an aspect of the minority culture (Buddhism) and adopted an aspect of a foreign culture (Christianity) in order to express their attachment to the minority culture. This is an acculturation process that the fourfold paradigm would be unable to comprehend or to correctly classify.

This example should also make it clear that the same cultural practice can be arrived at by different, even contrary, acculturative processes. Thus, finding that a Korean in 1920 is a Christian cannot be a basis for determining what type of acculturation led to that. Maybe the person was a Korean patriot engaging in Type g acculturation who preferred anything but Shintoism or Buddhism. But maybe the person was just the opposite, a traitor who hated Korea and engaged in Type i acculturation, preferring anything but Chondogyo or Buddhism. Or maybe the person was a humanitarian idealist who disliked ethnocentric nationalism and therefore preferred the Type j acculturative options of Buddhism or Christianity. Or maybe the person was a Type o individual who was busy with other things, indifferent to issues of nationalism, and thus anything was acceptable, including Christianity. If acculturation research is to be logical, there is no easy one-to-one mapping between attitudes and practices. One attitude can motivate several possible practices, and any practice can arise from several different attitudes.

The utility of a logical model of acculturation is well illustrated by its use in clarifying Montreuil and Bourhis's (2001, p. 705) study of Quebec students' attitudes toward immigrants from France and Haiti. The integrationism construct was operationalized as Type k acculturation, composed of Subspaces 1, 2, and 3 (see Figure 3): "Immigrants should maintain their own heritage culture while also adopting the Quebecois culture." Assimilationism was operationalized as Type b, comprising only Subspace 2: "Immigrants should give up their culture for the sake of adopting Quebecois culture." Segregationism was operationalized as Type a, composed of only Subspace 1: "Immigrants can maintain their own culture of origin as long as they do not mix it with Quebecois culture." Exclusionism was operationalized as Type d, comprising only Subspace 4: "Immigrants should not maintain their culture of origin, nor adopt the Quebecois culture" (here a "double-barreled" aspect about reducing immigration is deleted). Individualism was operationalized as Type o, composed of Subspaces 1, 2, 3, and 4: "Whether immigrants maintain their cultural heritage or adopt the Quebecois culture makes no difference" (again a "double-barreled" aspect is deleted). Thus, assimilationism, segregationism, and exclusionism can each be conceived to operationalize one of the four logical subspaces in the first Euler diagram in Figure 3. Integrationism operationalized Subspaces 1, 2, and 3, and individualism operationalized Subspaces 1, 2, 3, and 4.

Thus, individualism and integrationism are not independent constructs, were correlated $r = +.62$, and should not have been entered into factor analysis as independent variables. The Montreuil and Bourhis (2001) study would have achieved direct coverage of all of the logical acculturation options if it had also operationalized a measure for Subspace 3, Type c integration.

The research question focused on which types of acculturation the dominant group favored for the two minority groups. Montreuil and Bourhis's (2001, p. 710) Table 2 reported mean scale scores for the 637 respondents using a 7-point Likert scale. The confounds caused by the double-barreled aspects of two items are ignored here. The very low score for exclusionism ($M = 1.84$) removes foreign cultures in Subspace 4 from consideration as a favored outcome. The high scores for integrationism ($M = 5.22$) mean that the respondents favored Subspaces 1, 2, or 3, and the low scores for assimilationism ($M = 2.80$) and segregationism ($M = 2.52$) mean that they disfavored Subspaces 1 and 2. Thus, the data show that these respondents favored Subspace 3, which is inte-

gration of Type c, namely, qualities of culture that are shared by immigrants and native Quebecers. This conclusion was replicated with the individualism measure, which showed high scores ($M = 5.55$), which means that respondents favored Subspaces 1, 2, 3, or 4. The low segregationism, assimilationism, and exclusionism scores, however, disfavored Subspaces 1, 2, or 4, again leaving Subspace 3 as the preference.

Type c integration includes cultural blending of the "melting pot" type and would be easier if the two cultures had much in common and thus exhibited low cultural distance. The finding that Quebec respondents were more favorable toward Type c integration with immigrants from France than with immigrants from Haiti may be due to Quebecers having less in common with Haitians rather than to Haitians being "devalued." Bartlett (1923/1970) had argued eight decades earlier that cultural similarity facilitates acculturation.

It should be noted that, in a full logical model, segregationism (represented by Subspace 1) and assimilationism (represented by Subspace 2) are independent constructs rather than ipsative constructs as in the fourfold model. Thus, they are not antithetical, and they can both be endorsed without contradiction. The strong positive correlation of $r = +.60$ discussed in the introduction probably appeared in the data because segregationism and assimilationism were rejected in unison by the many respondents favoring Type c integration. However, any respondents favoring exclusionism of Type d would also reject segregationism and assimilation in unison, and any respondents favoring acculturation Type e, k, l, or o would have endorsed rather than rejected both Subspaces 1 and 2. Without a detailed look at the data tabulated by acculturation types, it is difficult to determine the full cause of the strong positive correlation between Subspaces 1 and 2, but it probably entails most respondents rejecting both and some respondents endorsing both.

Why Typologies?

Table 3 suggests that it is easy if not "natural" for acculturation theorists as a social class to think of minority acculturation in terms of typologies. However, none of the 68 reports explained why acculturation should be conceptualized as a typology, in the sense that individuals or attitudes are to be grouped by clustering in multidimensional space or by the presence or absence of specified features. Personality theories use typologies when they classify people according to the presence or absence of traits. Personality theories are, of course, common in psychology, and they have been adopted by some anthropologists for classifying cultures (e.g., Barnett et al., 1954; Redfield et al., 1936). Thus, resorting to typologies could be merely a habit of thought rather than a considered decision.

However, it is probably more common to theorize not about types but about variables, as exemplified by the acculturation research of Taft (1957) and Seelye and Brewer (1970). The latter study, which has been cited rarely if ever by acculturation typologists, concluded that situational factors such as job circumstances are more important in acculturation processes than are internal attributes such as attitudes or personality. Such findings are easily overlooked by acculturation typologists who focus on internal, dispositional features and thereby induce the Fundamental Error of Attribution, thus biasing themselves to seek causal explanations in the acculturating personalities or groups rather than the acculturation situations (Boski & Rudmin, 1989; Ichheiser, 1949; Rudmin, Trimpop, Kryl, & Boski, 1987). This may in part explain the excessive focus on studying the attitudes, motivations, personalities, and preferences of minority groups (Barnett et al., 1954; Mason, 1955; Rudmin, 1996). Typologies may also explain, in part, why there is widespread concern about problems and pathologies arising from acculturation but little corresponding concern about remediation. Typologies tend to reify traits and to view them as inherent in the individual or group and thus not easily changed.

Recommendations

Several recommendations can be made on the basis of this review.

1. Researchers should be alert to their biases, articulate them, and take appropriate methodological steps to discover and control them, for example, by adhering to established psychometric standards regarding constructs, items, and analyses; by controlling and measuring response biases; by using control groups; or by

seeking replication within studies and between studies.

2. Researchers should seek to understand the history of the theories, methods, and taxonomies they choose to use and take responsibility for maintaining literature links and standard vocabulary.

3. Researchers using a typological approach should explain why they prefer this approach to alternative approaches and should explain how they have avoided the Fundamental Error of Attribution.

4. Researchers motivated by desires to understand acculturation should presume, in their theories, research, and writing, that acculturation is a normal, universal human process that occurs regardless of minority or majority status.

5. Researchers motivated by desires to advance minority rights should collaborate with like-minded scholars in the other social sciences, especially law, and should begin by determining which kinds of research would be rhetorically and politically most effective.

6. Researchers motivated by desires to make acculturation less stressful should operationalize theory-driven interventions and should test their effectiveness using double-blind designs, if possible, in competition with other theories and interventions.

7. Researchers should decide on a dimensional model or a distinctive features model. If preferring the former, they should create independent measures for each culture studied and then use empirical criteria to choose between clustering methods of analysis or multidimensional and factor-analytic methods. If they prefer the distinctive features model, they should create independent measures representing the subspaces illustrated in Figure 3 to allow estimation of all 16 types of acculturation.

8. Researchers should identify responses of indifference, for example, by including "no opinion" or "don't know" response options and by discounting data that show no differences from random responding. Responses indicating indifference should not be merged into other measures or categories.

9. Researchers should use qualitative methods to understand the motivations and emic perspectives of the minority and majority groups, especially the political and cultural leaders of the minority and the policymakers and politicians of the governing majority.

10. Finally, to the degree that such recommendations are adopted, theoretical and empirical critiques of research will become more common, if not the norm. Researchers should ready themselves to welcome and respond positively to such critiques and thereby move the field forward as a community of scholars.

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Appendix

Changing Meaning of Marginalization Terminology in Berry's Acculturation Typologies

1970: Sommerlad and Berry

Marginal: "Those who identify with both the host society and with their own group. . . . Since identification as 'Both' is a transitional stage, some individuals would be expected to favor integration . . . while others might favor assimilation" (p. 24). Used as an independent variable predicting acculturation modes.

1970: Berry

Marginal: "Caught between two cultural systems" (p. 240). Used as an acculturation mode.

Marginality: "Overlap . . . so that two cultures are mixed . . . [and] marginal to both the contributing cultural systems . . . may be full and satisfying for its members" (pp. 240–241). Used to describe a society rather than an individual or a minority group.

Marginality: "Aggression, suspicion, uncertainty, victimization-rejection, anxiety, and a lack of solidarity" (p. 241). Used as a dependent variable to be predicted by acculturation modes.

1972: Berry, Evans, and Rawlinson

Deculturation: "Those who have dropped out of any social-cultural system . . . choice here is no ethnic identity, no institutional control . . . [and] no agreement to work for the goals of the dominant group" (p. 29). Used as an acculturation mode derived from a $2 \times 2 \times 2$ scheme.

Unlabeled: "This choice involves loss of ethnic identity but retention of institutional control while rejecting mutual goals . . . [this is] inherently contradictory" (p. 29). Used as an acculturation mode derived from a $2 \times 2 \times 2$ scheme.

1974: Berry

Deculturation: "No ethnic retention, no positive intergroup relations and no choice in the matter" (p. 20). Used as an acculturation mode derived from a $2 \times 2 \times 2$ scheme.

Marginality: "Ethnic groups, apparently without pressure, occupy a position between two cultural systems, belonging to neither and having few positive intergroup contacts" (p. 20). Used as an acculturation mode derived from a $2 \times 2 \times 2$ scheme.

1974: Berry and Annis

Marginality: "Acculturative stress variables . . . include . . . marginality scale prepared by Mann" (p. 395). Used as a dependent variable to be predicted by acculturation modes.

1976: Berry

Deculturation: "Giving up traditional culture . . . away from the larger society. Common sense and pilot work indicated that such an outcome was not to be chosen by anyone; however, some features of the concept of marginality are related to feelings in this combination" (p. 180). Used as an acculturation mode but not operationalized.

1977: Berry, Kalin, and Taylor

Deculturation: "The deculturation response is almost never accepted in a population; thus no scale has been developed" (p. 132). To have been used as negatively keyed items for a scale measuring integration, but now called multiculturalism.

1983: Berry

Deculturation: "Collective and individual confusion and anxiety [characterized] by feelings of alienation, loss of identity, and what has been termed acculturative stress . . . in which groups are out of cultural and psychological contact with either their traditional culture or the larger society" (p. 69). Used as an acculturation mode.

Marginality: "When [deculturation is] stabilized in a non-dominant group, it constitutes the classical situation of 'marginality' " (p. 69). Used as an acculturation mode.

1989: Berry, Kim, Power, Young, and Bujaki

Marginalization: "Marginalization has been termed 'Deculturation' [and] was approximated by the scale of Marginality constructed by Mann (1958)" (p. 187). Used as an acculturation mode to predict marginality and stress.

Correction to Haggbloom et al. (2002)

Haggbloom, S. J., Warnick, R., Warnick, J. E., Jones, V. K., Yarbrough, G. L., Russell, T. M., Borecky, C. M., McGahhey, R., Powell, J. L., Beavers, J., & Monte, E. (2002). The 100 most eminent psychologists of the 20th century. *Review of General Psychology, 6,* 139-152.

I note two errors in Haggbloom et al.'s (2002) list of eminent psychologists. One is the appearance of the name of W. Gary Cannon, a recently deceased psychologist, who was neither a member of the National Academy of Sciences (NAS) nor associated with the Cannon-Bard theory of emotion. These were instead the accomplishments of the great American physiologist Walter B. Cannon, who made important contributions to psychology. A second error involving the name of Cannon concerns the entry for an individual identified as Margarete [sic] Washburn, whose accomplishments were those of Margaret F. Washburn. Haggbloom et al. credit her with an eponym for the Cannon-Washburn experiment on the nature of hunger sensations (Cannon, W. B., & Washburn, A. L. [1912]. An explanation of hunger. *American Journal of Physiology, 29,* 441-454). The Washburn of this famous experiment was A. L. Washburn, and the eponym memorializes his heroic contribution to this experiment, not Margaret F. Washburn's. Consequently, a reassessment and possible revision of the list of Haggbloom et al. (2002) is called for.—*Stephen L. Black, Department of Psychology, Bishop's University, Lennoxville, Quebec, Canada. (July 23, 2002)*

The authors thank Stephen L. Black, Bishop's University, for identifying our errors and especially for drawing our attention to the misattributed Cannon-Washburn eponym. In Table 4 on page 147, the name W. Gary Cannon should in fact be W. B. Cannon. Also, the eponym "Cannon-Washburn experiment" was incorrectly attributed to Margaret Washburn rather than A. L. Washburn. Correcting this error (a) removes Margaret Washburn from the list, (b) moves each name below Washburn up one place, and (c) moves Leo Postman from a ranking of 100 (previously unidentified) to a ranking of 99. Postman has a ranking of 52 on the Journal Citation List and was elected to the National Academy of Sciences.—*Steven J. Haggbloom. (January 9, 2003)*