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### **“Causality Crisis” in Acculturation Research a False Alarm?: A Commentary on Kunst (2021)**

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## Abstract

The invited IAIR Award Paper by Kunst (2021) published in IJIR asserts that there is a “causality crisis” in acculturation research and critically discusses the current meta-analytical evidence supporting the integration hypothesis. In this commentary, we question this claim in light of our understanding of the acculturation process and its constituent phenomena. Our proposal is to consider acculturation patterns as behavioral syndromes, in which many phenomena are inter-related and which change over the course of acculturation. We also question the claim in Kunst’s paper about meta-analytical evidence, and end with some proposals for future research on acculturation.

Keywords: acculturation, integration, adaptation, behavioral syndrome, causality, methodology.

The assertion in Kunst’s paper (2021) that there is a “causality crisis” in acculturation research is mainly based on the view that “*acculturation, at least in terms of how we commonly define it, is clearly a causal and temporal phenomenon*” (p. A5). We can readily agree that acculturation is a temporal phenomenon, but why does the paper connect this obvious point to it also being causal? In this commentary, we address the causality claim by considering the difference between *structural* and *causal* frameworks in scientific method. We claim that acculturation research can be valid and useful when the causal inference is not part of the goal or design of a study. Further, in this regard, we discuss the analysis and conclusion in Kunst’s paper (2021) regarding current meta-analytical evidence supporting the integration hypothesis.

## Causality in Acculturation Research

### *What Epistemological Framework Do We Use?*

There is an important epistemological distinction between *structural* frameworks and *causal* frameworks (e.g., Toomela, 2010). A structural framework is a set of theoretical concepts describing the empirical structure of the behavioral phenomena of interest (i.e., *what* are phenomena and *how* are they inter-related?). A causal framework is a set of theoretical concepts explaining possible mechanisms and processes of ultimate and proximate causation of the behavioral phenomena that are described by a structural framework (i.e., *what causes* phenomena?; see e.g., Uher, 2011). In our view, the acculturation framework proposed by Berry (2005; Berry et al., 2021) is a structural framework describing a set of empirical relationships by providing a grid (i.e., a terminology, concepts, and relationships among them), but is not a causal framework that seeks to explain the adaptations that result from the process of acculturation. Instead we view all these phenomena as being entwined in a complex set of behaviors that may be called a *behavioral syndrome* (see more detail in the section below).

In much of the work on acculturation (e.g., Berry et al., 2006; Berry & Hou, 2017; Inguglia et al., 2020) authors present a nomological network of relationships among variables. These reveal patterns of relationships among acculturation variables, which show links to personal, social, and economic factors, as well as relationships with acculturation strategies and some adaptations within this network. That is, there is a search for '*what goes with what*'. If there is consistency in these relationships (e.g., between the acculturation strategy of integration and psychological wellbeing), this is valuable information on which to base policy and programmes. In contrast, if another strategy never (such as marginalization) or only occasionally (such as assimilation) is related to adaptation, this overall pattern of findings does not need to demonstrate causation in order to take practical steps to improve acculturation outcomes.

*Acculturation Patterns through the Lens of Behavioral Syndrome as a Suite of Correlated Behaviors*

Recently Schwartz et al. (2020) noted the convergence between cultural psychology and developmental science in studies of acculturation. Another discipline, human behavioral ecology (HBE) deals with the development of behavioral flexibility as it adapts to ever-changing contexts. Berry's approach (2018) to HBE has incorporated both physical ecology (e.g., habitat) and social ecology (e.g., intercultural contact) to provide some insight into complex variations in these networks that are present during acculturation. The concept of behavioral syndromes would be especially helpful in this regard. For acculturation, this can be defined as the covariance of a set of psychological features<sup>1</sup> involved in the process of adaptation to changing ecological, cultural, and social conditions. This experience over time should modify the cognitive and behavioral repertoire of individuals, thereby adapting individuals to a culturally changed context.

One way of viewing adaptive change uses the example of aggressiveness in Sih and Bell (2008). They emphasized that most systems in genetic and neuroendocrine mechanisms underlying suites of behaviors are very complex, full of interactions and feedback, and that the behaviors are often many steps away from a simple or single source. Why should we expect simpler causal patterns in the process of acculturation, given that it involves complex interacting phenomena, perhaps even more so than genetic and neuroendocrine mechanisms? We generally agree that it would be good for the acculturation field to seek causal inferences, because this is one of the main objectives of any science.<sup>2</sup> However, we argue that it is not essential in order for acculturation research to be valid or useful.

*How to Treat Causality in Acculturation Research*

We claim that correlational research may provide helpful evidence on which to seek causal inferences. In support of this view, Grosz et al. (2020) argued that the taboo against causal inference in non-experimental psychology leads to different negative outcomes including limiting the relevance of

non-experimental psychology for policymaking. That is, correlational research should not prevent using any causal language to discuss results for purposes of theoretical generalization (causal assumptions and causal effects) in non-experimental studies at all (see also Hernán, 2018).

In addition to this perspective, we believe that the field of acculturation research could avoid some confusion by following Tinbergen's "four questions" framework (1963) that organizes research questions according to: (1) two ultimate longer-term and short-term explanations: *phylogenetic* (i.e., background history of phenomena) and *functional* (i.e., adaptationist functions of phenomena); and (2) two proximate longer-term and short-term explanations: *ontogenetic* (i.e., how phenomena develop over the lifetime of an individual), and *mechanistic* (i.e. mechanisms that cause phenomena). Using these distinctions, authors, reviewers, and editors should not avoid acknowledging the causal goal of research projects.

Kunst's paper (2021) also claims that in order to provide evidence of causation, acculturation research needs more experimental and longitudinal designs. However, the usefulness of qualitative methods is often underestimated for causal explanation (Maxwell, 2004). Moreover, qualitative studies can provide a deep understanding of the bidirectional and interactional process of mutual acculturation (i.e., behavioral syndromes) in order to overcome the limitations of quantitative methods (see e.g., Fedi et al., 2019; Wong et al., 2018). Another way to advance causal inferences is to use directed acyclic graphs (DAG), which have long been used in epidemiology (see e.g., Rohrer, 2018; Shrier & Platt, 2008). Recognizing the complexity of sets of behaviors had made network approaches useful in areas such as the symptom interaction in psychiatry (see e.g., Young, 2015). We believe that all these approaches can also prove beneficial to acculturation research in making causal inferences.

### **Meta-Analytical Evidence of the Integration Hypothesis**

*"Weak" Effect Sizes*

The Mutual Intercultural Relations in Plural Societies (MIRIPS) project (Berry, 2017) claimed that the integration hypothesis was supported, and suggested some recommendations for policy and programmes based on these findings. This hypothesis is that those individuals who use the integration acculturation strategy achieve a higher level of personal wellbeing than those using other strategies. This claim was further examined overall across 21 societies in a meta-analysis (Berry et al., 2021; see also meta-analyses of other research, e.g., Nguyen & Benet-Martínez, 2013; Stogianni et al., 2021). However, Kunst's paper (2021) emphasizes in several places that the correlation between integration and adaptation is "weak", which is likely to be mistakenly perceived as not sufficient for recommending practical intervention. We offer several arguments to counter these assertions.

First, the file-drawer problem (i.e., publication bias) and other questionable research practices make thresholds of effect size such as Cohen's ones ( $r = .10 =$  small,  $r = .30 =$  moderate, and  $r = .50 =$  large) inadequate because all average effect sizes in the literature are biased upward. The median effect size from pre-registered psychological research is  $r = .16$  which is lower (almost half) than in publications without pre-registration. There were very large differences in the mean effects between psychological sub-disciplines and between different study designs as well (see Schäfer & Schwarz, 2019).

Second, there is a classic example is the so-called Abelson's paradox, which demonstrates that a correlation of about .05 translates to large consequences (see Funder & Ozer, 2019; for other examples: Götz et al., 2021). Moreover, even such "weak" correlations matter for behavioral syndromes as well (see Sih & Bell, 2008). Recent work has also raised this issue and concluded that *'only once small effects are accepted as the norm, rather than the exception, can a reliable and reproducible cumulative psychological science be built'* (Götz et al., 2021, p. 1243).

Third, in general, it is not clear how any standardized effect sizes relate to practical implications. We would suggest following Grice et al. (2020) who propose using persons as effect sizes

and guiding the question: “how many people in the study behaved or responded in a manner consistent with theoretical expectation?” (see also Speelman & McGann, 2020).<sup>3</sup> They convincingly show in their paper that there are a number of distinct benefits to this approach.

Finally, effect sizes should be commensurate with the object of a study. For example, the consumption of a deadly poisonous mushroom (e.g., death cap amanita) would be related to very little of the variance in the health outcomes in the general population. This does not mean that the effect of death cap amanita intake on human health is weak. Similarly, the use of standardized effect sizes just does not have any general interpretation in acculturation research. While they are certainly useful for the relative comparison of some effects with others within and between studies, as well as power analysis to calculate the minimum required sample size.

### *High Heterogeneity*

Another observation in Kunst’s paper (2021) on the meta-analyses of the integration hypothesis is the high heterogeneity. On the issue of heterogeneity, we support a commentary by Schwartz and Cobb (2021), who relate it to the complexity of intergroup dynamics within a country, particularly the large set of variables that influence such dynamics. The heterogeneity found in the MIRIPS meta-analysis was no surprise to the authors. This is because the goal and design of the project was to include many diverse replications with different kinds of groups (such as immigrants, sojourners, national minorities, etc.) and in countries that have different histories and policies regarding intercultural relations. So, the variability in the empirical results is a natural outcome of the design.

### **Recommendations**

For the development of the field of acculturation, in addition to the above points, we take the opportunity to recommend that future research should: (1) use the behavioral syndrome perspective, as outlined in this paper; (2) use more dynamic paradigms (Wong et al., 2018); (3) consider contextual factors as outlined below especially at different levels of proximity (Doucerain, 2018); (4) focus more

on frameworks of social interaction (see Rai & Fiske, 2011; Verweij et al., 2015); and (5) elaborate a motivational perspective (Gezentsvey & Ward, 2008).

These recommendations all center, to some extent, on the need to consider the complexity of acculturation phenomena, but in particular to examine the contexts in which they occur (Berry, 2006). Large variations in adaptation outcomes have been shown to be rooted in the various contextual factors that supply the *affordances* (opportunities) and *limitations* (constraints) for the development and expression of acculturation behaviors. This perspective is in keeping with the behavioral ecology school of thought (Berry, 2018), where cultural features of populations are considered to be a set of long-term collective adaptations to ecological context, and in which individual human behavior is seen as a set of adaptations to the ecological and cultural contexts in which they develop. These adaptations to context take place not only within cultural populations, but also as a result of intercultural contact. These interactions and experiences with outside cultural influences bring about further behavior change through the process of acculturation.

The plural societies that are created by these intercultural movements and contacts vary in numerous ways. These variations all provide differential contexts within which the process of acculturation can take place (Berry, 2006). Some of these contexts are ‘distal’, including the general ideological orientation, policies and practices of society towards diversity. More immediate contexts include the types of groups (such as being an immigrant, refugee, national minority or Indigenous person). More proximal are the local contexts, such as the proportion of individuals from the same ethnic group living in a particular neighborhood (Jurcik et al., 2013), the familial and social networks (Doucerain, 2018; Salo & Birman, 2015) as well as other socialization agents. The interaction among these different contextual features creates complex macro contexts that together require fine-tuning of our understanding of the impacts of such contexts on acculturation phenomena.



One way to identify these varying contexts is through the use of a multi-level ‘Arc Model’ linking contexts to behaviors (Berry, 1980, in press). The goal of the model is to identify various levels of contexts and show how they give rise to different effects in groups and individuals. This model can serve as a general structural framework for organizing all the contexts into a single ‘nested’ system, in which proximal contexts and experiences are situated within more distal contexts. This model emphasizes the importance of considering distal contexts in acculturation (such as the history of colonization and economic and political domination in the society) down to proximal experiences in particular situations (such as the experience of discrimination and individual job loss). These variations in context are rarely included in much of the current acculturation research.

Differences between cultures are often abstract distal indicators of ‘cultural distance’; such dissimilarity between cultures makes it more difficult for integration, increases acculturative stress, and negatively affects adaptations (Ward & Geeraert, 2016). However, this perspective in the literature does not cover well the more proximal kinds of social relationships that groups and individuals construct across cultures. People in all cultures use specific relational models to organize much of their everyday social cognition. For example, during intercultural contact, moral disagreements may result from groups and individuals applying different relational models to the same situation (Rai & Fiske, 2011). The relational models theory and plural rationality theory, which also fits modern evidence from social neuroscience (Verweij et al., 2015), are appropriate approaches from anthropology when considering how individuals with different cultural backgrounds evaluate social situations.

The systematic examination of acculturation as a dynamic process and, how this process is affected by its ecological, cultural, and intercultural contexts, requires a dynamic view of culture as well. The view on culture as *malleable* refers to that is it varies across time, across social contexts, and in its meaning across individuals (Wong et al., 2018). Finally, motivation can be identified as the core dynamic process at the individual level. Elaboration of the motivational concept of *agency* in the

experiences of acculturating groups and individuals is important because agency underpins and influences critical aspects of the acculturation process in terms of stress and coping, culture learning, as well as identity and intergroup relations (see Gezentsvey & Ward, 2008). Acculturating groups (e.g., sojourners, refugees, indigenous peoples) just like individuals vary in agency, goals, and available means. We believe that careful theoretical and empirical work in these directions will significantly contribute to the acculturation field.

### Notes

<sup>1</sup> Acculturation profiles, which are used in a person-centered approach to acculturation (e.g., Berry et al., 2006; Grigoryev & van de Vijver, 2017, 2018; Kunst et al., 2021; Lefringhausen et al., 2021), are examples of using a holistic constellation of acculturation variables.

<sup>2</sup> A separate debate concerns the type of causality to be considered and what methods are suitable for this (see e.g., Grice, 2011, 2014; Rychlak, 1985; Toomela, 2010). For example, in papers that describe new methods for statistical data analyzing as well as in paper in which they are used, it is quite rare to find any understanding of what questions can and cannot be answered using these methods. However, scientists who introduced statistical data analysis into scientific practice, as a rule, made it clear what answers they were looking for. It can often be seen how these scientists disassociate themselves from the questions that today's researchers are trying to answer using frequency-based statistical analysis of data (e.g., see how Karl Pearson formulated the tasks of classical statistical data analysis and his understanding of causality in Toomela, 2010).

<sup>3</sup> In our commentary, we do not get involved in the debate about the problematic nature of Null Hypothesis Significance Testing and the estimation of aggregate population parameters (e.g., means, standard deviations, and frequencies, etc., as is the case with frequency statistical analysis of data, which often have no empirical basis and lead to the inability to logically reconcile the modeling at the level of the sample, with modeling at the observation level). However, we would support that causality

in the social sciences (especially with following Aristotle's understanding of causality) can be analyzed by studying ordered structures, where the observed patterns must exactly correspond to a hypothetical scheme (i.e., the number of observations is counted for which the effect exactly corresponds to the cause; see Grice, 2015; Grice et al., 2012, 2016; Thorngate & Ma, 2016; Sauer, 2018).

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