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**Conceptualization, Operationalization,
Construct Validity, and Truth in Advertising
In Criminological Research**

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As a species, humans paradoxically possess the strong drive to seek out the company and comfort of our own kind, while also showing some predilection for victimizing, exploiting, and harming each other. This predilection has been and remains an area of concern. Our attempts to address this fundamental concern have taken two broad and basic tracks. First, social institutions have evolved for the purposes of identifying and dealing with those individuals who would harm their group mates. We have come to refer to (at least part of) these institutions as the criminal justice system (CJS). Second, for over two hundred years, we have been formally and consistently engaged in trying to decipher, through theory and research, our criminal/deviant side. This we have come to call criminology. These two domains of reactions are part-and-parcel of a larger process; they are two facets of the same human endeavor. The focus of this analysis is most directly on the second facet of our efforts to address this intractable human foible, theory and research. However, in the realm of criminality and deviance it is not fully possible (and certainly not desirable) to address one of these facets without some attention to the other.

Criminology and the Conceptualization of Crime/Criminals

Given its own eclectic etiological roots and the broad and diverse nature of its focus, criminology is, by necessity and pedigree, highly interdisciplinary in nature, drawing from a wide array of disciplines. Because of this strong interdisciplinary character, our conceptualizations of crime and criminals can vary substantially and cover considerable theoretical terrain, and this gets to the crux of the current analysis. How crime and criminals are conceptualized is an essential and foundational consideration in criminology. The conceptualization adopted underlies the theories that are developed, determines the methods of data collection, and thereby influences and informs the policies for addressing crime that are supported and promoted.

This latter area of influence relates directly to the strong connections between criminology and criminal justice and warrants some further comment. Criminal justice refers, primarily, to the agencies of social control which are charged with implementing and enforcing the law and dealing with those who violate it. Criminology and criminal justice, to a great extent, are two sides of the same coin; they are, at the same time, interdependent and independent disciplines and institutions. On the academic/scientific side, we must have knowledge of the practical and functional aspects of the CJS to develop grounded theories. By the same token, system practitioners rely on the academic side for theory and research to help guide and inform policy and practice. In this interactive process, there is conceptual overlap, but also conceptual independence, and even some conflict. Also, it is important to note that it is this intricate relationship that ups the ante when we think about the functions and impact of criminological theories. "Virtually every policy or action taken regarding crime is based on some underlying theory or theories of crime (i.e., on conceptualizations). It is essential, therefore, to comprehend and evaluate the major theories of criminology, not only for the academic or research criminologist, but also for the educated citizen and the legal or criminal justice professional" (Akers, 1997, p.2, parenthetical added). Akers (1997) is not alone in acknowledging the strong and essential connection between theory/research and policy/practice (see also Holdaway & Rock, 1998; Lanier & Henry, 1998; Lilly, Cullen & Ball, 1995; Pfohl, 1985; Vold, Bernard, & Snipes, 1998; Hashimoto, 2011;).

Given the foundational role of theory and its intimate connection with policy, it is widely agreed that it is imperative that we test our theories (Babbie, 2008; Birks, Townsley & Stewart, 2012; Holdaway & Rock, 1998; Kreager, Rulison, & Moody, 2011; Van de Rakt, Ruitter, De Graaf, & Nieuwbeerta, 2010). It is crucial that we (accurately) assess how well they are serving us as guides or maps to the real world, and that we also assess their utility in helping to construct viable and functional policies and practices.

In order to test our theories (and also to evaluate our policies and practices), we must translate the elements from the theory into injunctions or "measurement" processes. We must

translate our conceptualizations into operationalizations (hopefully without losing too much in the translation). The main purpose of the analysis presented here is to explore the relationship between conceptualization and operationalization. Before we can begin to delve into this central relationship, we need to fully define what we mean by conceptualization and operationalization; in other words, we need to define our “concepts.”

Conceptualization

Let us begin by noting that, despite the frequency with which the word *conceptualization* is used, it is not very often directly defined. *Concept*, on the other hand, is defined all over the place. Generally, concepts may be viewed as qualitative, global notions that characterize some element(s) of reality. When we pull together a group of concepts that can be logically related, we might then call that a theory, which brings us to conceptualization. Babbie (1989) defines conceptualization as the mental process whereby fuzzy and imprecise notions (concepts) are made more specific and detailed, the process through which we specify precisely what we mean when we use a particular term. He further notes that the end product of conceptualization is a set of indicators. So, for Babbie, part of the process of conceptualizing is a sorting out of the kinds of observations/measurements that will be appropriate in our research.

Senese (1997) sees conceptualization as the second stage of research design (after idea formulation). It is the process of refining research ideas into specific terms and the beginning of your own interpretation and approach to the study. Conceptualization focuses the research design on specific concepts or ideas to be the subject/object of study. The conceptualization of the research issue or question indicates the concepts to be used, or the conceptual basis for the study, and represents a set of basic expectations about what you believe you will find.

Conceptualization also provides an explanation of these general expectations. To summarize, conceptualization is the construct that we use to describe the varied things that go on in the process of translating concepts into theories and then especially into research. It is what we think about and do with concepts. It is the mental framework we construct with and about a set of related concepts. We use these frameworks for constructing meaning in and about our world. From the standpoint of social science, our conceptualizations of phenomena, issues, problems, etc. become the bases for our theories, our research, and ultimately for our policies and practices.

Babbie (1989) noted that the end point of conceptualizing is the development of a set of indicators. A key aspect of conceptualization is linking a mental representation of a phenomenon (i.e. a concept or conceptual definition) with ways to compare that representation to reality. Conceptualization ultimately leads to the development or identifying of injunctions/exemplars/paradigms (Babbie, 1989). Most certainly conceptualization entails developing theories about how the world works. But the hallmark of science is to then test those representations against the real world, to assess the veracity of our theories, and thereby establish their utility and functionality. Consequently, a vital issue becomes, “how do we operationalize our concepts?” We must ask honestly of ourselves “How fully are we able to measure or assess what we have conceptualized?” “To what extent do our injunctions match our concepts?” We must also be willing to explore the implications for gaps in this process. “What does it mean when there is a disjuncture between our concepts/conceptual definitions and our injunctions?”

Operationalization

“Whereas conceptualization concerns the intellectual clarification of concepts for measurement, *operationalization* is the construction of actual, concrete measurement techniques” (Babbie, 1989, p. 5, italics in original). Senese (1997) defines operationalization as “the process of defining variables” that represent “specific concepts or portions thereof.” More

importantly he reminds us that “[W]hen researchers operationalize they impose their ideas about how the concept should be *measured* on the study situation” (p. 381, italics not in original).

Operationalization then is the development of measurable representations of concepts and/or dimensions of concepts (i.e., variables). It is the development of specific research procedures/operations/measures that will result in empirical observations/data representing the abstract concepts of interest in the study. Operationalization is the process of putting the concepts of interest into operation or of operating on those concepts in order to “measure” them, both individually and/or in relation to other concepts. It is the process that permits us to compare our conceptual definitions to “reality.” It produces the data upon which we base theory refinement/modification, theory verification or refutation, and ultimately policy and practice. The importance of this step in the research process cannot be overestimated as it yields the final versions, so to speak, of what our concepts are thought to look like, how they are thought to act and function, and to a great extent what we are to do with or about them. It would seem to be *sine qua non* that we are meticulous about the translation of concepts, through conceptual and then operational definitions.

Slippage and Construct Validity

Construct validity, as typically defined, refers to the degree to which inferences can legitimately/validly be made about theoretical constructs/concepts from the operationalizations of those constructs. It “involves making inferences from the sampling particulars of a study to the higher-order constructs they represent” (Shadish et al., 2002, p. 65). “Construct validity refers to the adequacy of the operational definition and measurement of the theoretical constructs...” in question (Farrington, 2003). Put more simply, construct validity refers to the extent to which we are measuring what we think (and claim) that we are measuring; it refers directly to the translation of conceptual definitions into operational definitions.

Shadish et al. (2002, p. 65) note that there are three reasons why construct validity is important: 1) Constructs¹ constitute the “central means” for connecting the operations in a study to “pertinent theory and to language communities.” 2) Construct labels can and often do carry social, political, and economic implications.

“They shape perceptions, frame debates, and elicit support and criticism.” 3) The

“creation and defense of basic constructs is a fundamental task of all science.” All constructs have multiple features. The more central features are identified as being prototypical of the construct. However, what is prototypical depends on the “particular language community” doing the choosing (Shadish et al., 2002). Identifying prototypical features is an essential aspect of translating concepts into operations. Given the various difficulties with establishing prototypical features for our concepts “... it is never possible to establish a one-to-one relationship between the operations of a study and corresponding constructs” (Shadish et al., 2002, p.68); there is always some “slippage” (i.e., some gap between the concept that has been conceptualized and the measures of that concept). It seems then that a major focus in our research should be to minimize this slippage as much as possible.

Anything that potentially increases slippage can be considered as a threat to construct validity. Shadish et al. (2002) list fourteen such threats. For the purposes of this analysis, there are three threats that are particularly salient and that should serve to illuminate our concerns and points: 1) mono-operation bias – any one operationalization of a construct will both under represent the construct of interest (i.e., will not address all of the relevant dimensions and/or all of the

¹ Shadish et al. (2002, p. 506) define construct as “a concept, model, or schematic idea.

prototypical features) and also will include some measurement of irrelevant constructs; 2) monomethod bias – when all operations use the same method that method is actually a part of the construct studied (i.e., the method itself may influence results); and, 3) confounding constructs with levels of constructs – inferences about constructs that are best represented with the operations in the study may not delineate the restricted levels (or dimensions) of the construct that were actually operationalized. As noted above, it would seem that as the goal of research is to be able to draw valid inferences from our operations about the concepts of interest, we need to do everything we can to reduce slippage/to control for construct validity threats. The first step in enhancing construct validity is to fully explicate the construct/concept. However, as noted by Shadish et al. (2002), this is only half of the battle. No matter how well a construct is explicated, in order to study it, it has to be translated into operations. It is here that we must become concerned about slippage. Farrington (2003) reminds us that this issue is particularly salient in our discipline when he notes that “[W]hereas the operational definition and measurement of physical constructs such as height and weight are not contentious, this is not true of most criminological constructs” (p. 54).

We need to fully acknowledge the multi-dimensional nature of our constructs and endeavor to address as many dimensions as possible through our operations. This means that we need to employ multiple operations/measures of our constructs, for both independent and dependent variables. We also need to acknowledge explicitly and overtly the limitations of our measures and not fall victim to confounding constructs with levels of constructs. There has been some acknowledgement of these issues with the more recent calls for multi-methodological or mixed methodological approaches (see for example Creswell, J. W. & Plano Clark, V. L., 2007; Brewer, 2005; Johnson & Christensen, 2004; Creswell, 2002). Despite the growing level of interest in mixed method approaches, a lot of work still remains in terms of philosophical positions, designs, analysis, etc. (Esbjörn-Hargens, 2006). To more fully address the issues of construct validity and slippage, we will require a broader and deeper view of what constitutes legitimate methodology, and the movement toward mixed methods is definitely a step in the right direction. However, as noted, there is still much to be done to more fully develop these approaches. We will revisit these issues below when we discuss the causes of slippage and also in the section on alternative methodologies.

From Conceptual to Operational Definitions in Criminological Research: An Assessment of Concordance

Despite the pivotal role of translating conceptual definitions into operational ones, there seems to be very little real attention devoted to careful monitoring or assessment of the relationship between concepts and measures. This lack of attention applies to dependent and independent variables alike. There is much said in the literature about the process of measurement itself and about constructing specific measures, which is most often presented under the guise of operationalization or operational definitions. However, this discussion focuses on a very narrow range of elements and has historically promoted an extremely limiting view about what valid measurement is and can be; thereby severely restricting the dialog on what it means to move from concept to operational definition. Cohen (2009) conducted an in-depth analysis to examine the concordance between conceptual and operational definitions of gender in criminological research, as well as in some other social sciences. The analysis and results are briefly presented below to provide an illustration of the slippage that often does occur when we move from concepts to operations.

Conceptualization and Operationalization of Gender in Criminological Literature: The Problem of Construct Validity

As discussed above, an important step in the process of bolstering construct validity is to fully explicate the prototypical elements of any construct (Shadish et al., 2002). To this end, Wilber's (2000a) Integral AQAL model offers one possible framework. According to Wilber's AQAL model, all human phenomena have four distinct, yet interrelated quadrants. These quadrants are the interior individual, interior collective, exterior individual, and exterior collective (see Wilber, 2000a; 2000b; 2000c).

One interpretation of these quadrants is as dimensions of human experience (quadrant-dimensions). The interior individual quadrant-dimension corresponds to individuals' subjective experiences such as thoughts, emotions, attitudes, and beliefs. The interior collective quadrant-dimension corresponds to inter-subjective experiences such as shared meaning, mutual resonance, and culture. The exterior individual quadrant-dimension corresponds to objective experiences such as behavior, biology, and physiology. Finally, the exterior collective quadrant-dimension corresponds to inter-objective experiences such as the functional fit of parts within a social system and modes of interaction.

A second interpretation of the quadrants is as the four primordial perspectives that we can adopt when looking at a particular phenomenon (quadrant perspectives). In other words, at any given point in time we are able to both feel into all four quadrant-dimensions as aspects of our lived reality, as well as take on all four quadrant-perspectives as analytic lenses. Further, our ability to "see" each quadrant-dimension depends on the application of a distinct "eye" or quadrant perspective.

To state this within the language of scientific research, the four quadrant dimensions correspond to the prototypical elements of a construct, which generate conceptual definitions at particular points in time, for particular language communities (e.g., disciplines). Further, the four quadrant-perspectives correspond to the ways we can "see" or enact each quadrant-dimension, generating a set of appropriate operational definitions. And, perhaps more important for our discussion here, one must insure that claims made regarding each of the prototypical elements emerge from research in which appropriately corresponding conceptual and operational definitions are enacted.

To help illustrate these points, and support our overarching position that criminology needs a meta-theoretical framework that will reduce slippage and, therefore, enhance our ability to remain truthful in our advertising, we briefly present findings from a study of the treatment of gender as a construct in criminological research (Cohen, 2009). The methodological context of the broader study from which the findings reported here come is a content analysis of 851 peer-reviewed journal articles published in criminology, sociology, and psychology. While the current presentation focuses on the criminological literature (138 articles), the findings were relatively consistent across all three disciplines included the original analysis.

The four-quadrant framework of the AQAL model described above was used to create the coding scheme employed in the analysis (see Table 1). The quadrants as dimensions were employed to identify and categorize ways in which the prototypical elements of gender have been conceptually defined, while the quadrants as perspectives were employed to identify and categorize the ways in which the prototypical elements have been operationally defined.²

² The claim that Integral Theory offers an adequate framework for identifying prototypical elements is supported by an analysis in which the quadrant-dimensions were shown to cover the wide range of scholarly treatments of gender that have emerged in the academic and scientific literature (see Cohen, 2008; 2009).

Dimension/ Perspective	Defined as prototypical element of gender	Label	Sample conceptual definition (From the criminological literature)	Sample operational definition (From the criminological literature)
Interior Individual	The aspects of gender which are experienced within an individual's own psyche	gender-identity	Women's identities as partners or mothers (Kruttschnitt & Carbone-Lopez, 2006)	In-depth interviews with individual women
Interior Collective	Culturally shared beliefs about gendered beings	gender ideologies	Media images of women (Cecil, 2007)	Content-analysis of reality-based programming
Exterior Individual	Biological traits associated with gendered beings	sex	Observed sex (Smith, Makarios, & Alpert, 2006)	Sex as recorded by police officers on citizen contact cards
Exterior Collective	Behaviors or activities performed by gendered beings which have become institutionalized within various social systems	gender roles	Structural inequality between men and women (Vieraitis, Britto, & Kovandzic, 2007)	Computation of disparity in education, income, employment, and occupational attainment between men and women

Table 1: The Quadrants as Framework for Coding Conceptual and Operational Definitions of Gender in the Criminological Literature

The sample definitions in Table 1 represent instances in which the researchers employed appropriate operational definitions to measure their conceptual definitions. For example, in their

study of women involved in violent crime, Kruttschnitt and Carbone-Lopez (2006) included concepts such as women's "identities as partners or mothers" and "perceived threats to their status as a good mother or a faithful partner" (p. 344). In order to measure these gender-identity related conceptual definitions, these researchers employed in-depth interviews. During these interviews, the women who participated in their study were able to describe their gender identities and perceived threats to those identities in their own words, from their own perspectives.

Notice that these researchers included conceptual definitions of gender oriented towards an individual's subjective experience as a gendered-being—the interior individual quadrant-dimension. Equally important, these researchers employed an operationalization appropriately designed to enact the corresponding interior individual quadrant-perspective. In-depth interviews, as a method, allow participants to enact their understanding of themselves as gendered-beings directly. In contrast, Miller's (2007) study of criminal events offers an illustration of how even the most well-intentioned and well-informed researchers can fall prey to slippage. Miller clearly understands the complexity of gender as a lived experience and the need, therefore, to develop more inclusive and nuanced conceptual definitions. Moreover, Miller identifies gender as an important variable: "the primary independent variables, *offender gender* and the involvement of co-offenders, were central to the research objective of examining how *gender as a social practice* is intertwined with offending" (p. 211; emphasis added). It is no surprise that someone so well versed in the literature on gender (citing multiple theories of gender and drawing extensively from the feminist literature) would construct a conceptualization that attempts to capture the complexity of gender as a lived experience and practice. Unfortunately, the complexity of this conceptualization of gender is not reflected in the operationalization employed in Miller's study.

In an interesting (and not all too uncommon) maneuvering, Miller (2007) presents the operationalization of gender in the following terms: "the gender variable is actually more accurately called sex and was coded as a dummy variable with male treated as the reference category" (p. 211). In an endnote, Miller admits that, "this operationalization of gender is simply a dualistic measure of sex" (p. 220). So, while recognizing the conceptual complexity of gender as a social practice and openly admitting the limitations of the "add sex and stir approach," Miller still relies on this approach in the analysis. In recognizing this sleight-of-hand, Miller states, "the constant construction of identity that describes the process of gender is *artificially suspended* to fit it within the constraints of conventional deductive analyses" (p. 221; emphasis added).

So for those who are following along, Miller recognizes (conceptually) that gender is a social practice that involves the fluid and continuous construction of identity by an individual (interior-individual quadrant-dimension) in relation to collective constructions (interior-collective quadrant-dimension) that are not necessarily reflected in a dichotomized view of sex (exterior-individual quadrant dimension); however, if we want to continue to employ those types of operational approaches that are valued by our discipline (e.g., complex statistical analyses), we must "artificially suspend" the lived experiences of those we study and adopt proxy measures that we know do not fully represent those experiences.

In the overall analysis, roughly 11% of the 138 articles published in criminology and criminal justice journals included in the study sample employed operational definitions that did not match their conceptualizations of gender (i.e., had issues with slippage). If we remove those articles that did not include definitions of gender, the rate of slippage increases to 15%. Interestingly, higher rates of slippage were found in those journals specifically focused on gender (21%) than the more mainstream journals (12%). It appears that while researchers sensitive to the

complexity of gender are recognizing a wider range of conceptual definitions, they are still adhering to a limited range of operationalizations and methods.³

While gender provides one illustration of the problem of slippage, it is certainly reasonable to conclude that we might well find similar situations with other concepts and measures, such as race, socioeconomic status, recidivism, criminality, and even crime itself, just to name a few. This conclusion is based, at least in part, on what we believe to be one of the dominant contributing factors to the problem of slippage, the narrow and shallow approach to science and methodology that predominates in criminology (and across the social sciences).

The Causes/Sources of Slippage

Williams (1999) observes that “[P]erhaps due in part to greater emphasis on methodological sophistication than on understanding theory, many researchers simply *approximate* theoretical concepts with variables that are handy in the secondary data that they use” (p. 70). With this observation, Williams has identified at least three factors that can contribute to slippage in criminological (and other) research.

The first factor relates to what has been identified as an “overweening emphasis on quantitative, statistical analysis and the strong tendency toward disciplinary reductionism” (Williams, 1999, p. 75). Criminology has “...followed the ‘hard’ sciences into an alley where we are more concerned with measurement itself” than with the substance of that being measured (p. 97). Martin et al. (2004) identified three central criticisms of criminology from the literature, one being that criminology is too narrow and too empirical (see also Martin, 2006). Christie (1997) attributes what he calls the “triviality of our findings” to “over socialization to expectations created by science” (p. 13). The core concern is that we are allowing the methodological tools to overshadow their own purpose. In other words, we are allowing the method to define the concept; we are forcing all of the pegs, regardless of shape, into the same round hole. Williams (1999) refers to this as the “metaparadigm of quantitative methodology” and observes that overemphasizing one approach actually constitutes a general threat to knowledge.

A second and closely related factor is the ever-increasing reliance on secondary data (see Jasinski, 2004; Mroczek et al., 2011). We end up defining our concepts based on data that already exist, rather than developing injunctions/operations tailored by the concepts in question. As sometimes these are official data, there is the added issue of having political and other organizational agendas define our concepts and/or operational definitions. These data sets have been developed to meet the needs of various political/social entities, and as Rappert (1997, p. 239) aptly notes “the incorporation of users’ needs in social science research” can create serious problems and has important ramifications for the future of such research. (We will touch more on this issue under another source of slippage discussed below.)

Third, Shadish et al. (2002) list inadequate explication of constructs as a threat to construct validity. If we are emphasizing methods and measurement over theory, the focus shifts to operational as opposed to conceptual definition, and as discussed above, method comes to define concepts rather than conceptualization helping to guide methods. If we add into this equation a narrow focus on what constitutes acceptable/legitimate methods, the potential for slippage increases even more. This helps create a situation where theories that are derived from “empirical” evidence “...may never come close to representing reality” (Williams, 1999, p. 97).

³ It should be noted that assessing the problem of slippage does not address the issue of whether those studies/articles that did not indicate slippage are adequately defining and then measuring the concepts at hand. The assessment only addresses the extent to which the operational definition/measurement process matches the conceptual definition offered. In other words, the issue of adequate/inadequate explication of constructs is not addressed.

We will briefly note one other source for slippage. A recurrent concern expressed in the literature is that criminology is too closely associated with criminal justice (Martin et al., 2004). The trepidation over the seemingly tense wedding of criminology and criminal justice is pertinent to our discussion of slippage for several reasons. It relates to the issues raised above about narrow/shallow methodologies, as well as the concerns about incorporating users' needs into the scientific process. The methodologies most well suited for addressing more specific applied research or policy type questions are not necessarily the best methodologies for addressing more basic research questions or testing theory. Conceptual and/or operational definitions developed in applied research may well not reflect all of the aspects of the complex constructs that more deeply underlie the policies and practices and that make up the foundational theories of crime and criminality. For example, the official statistics on the distribution of crime by sex may help departments of corrections determine resource allocations, but they cannot address gender as an explanatory construct in the etiology of crime, or as a factor in the organizational climates of criminal justice agencies.

Also, this relationship gets back into the area of overlapping language communities, which refer to different domains that have concepts in common. In such cases, the concept is defined differently in the various domains, and it can be problematic to subsume one definition under another. To do so constitutes an element of slippage and creates challenges to construct validity. Identifying a person's biological sex with one simple question certainly does capture an element of the concept of gender, but it does not remotely capture the full depth and breadth of the construct. For a department of corrections, the "problem" of gender may well be one of allocating resources by sex, but for a social worker or clinical psychologist the issue of gender takes on whole other meanings and is in reality another set of issues. Not recognizing this multiplicity of existence and enactment of our concepts, to us, constitutes a form of slippage.

The Consequences of Slippage

Before we get into a brief discussion of alternative methodological frameworks, it is important that we first address some of the repercussions of slippage. In *The Mismeasure of Man*, Stephen J. Gould (1981) provides a compelling and dramatic (recurring) illustration of the negative and destructive impacts that can occur when operationalizations are inadequate to capture the complexity of constructs. Gould describes the history of measuring human intelligence and outcomes that have been related to the measurement process and the resultant data/findings. From early operationalizations where brain size (which was equated with intelligence) was measured by filling skulls with flax seeds and weighing them, all the way up through modern era intelligence testing, inadequate operational definitions of intelligence have served as the basis of or at least support for discriminatory and harmful policies and practices. The early studies helped provide the justifications for Great Britain's colonization policies and the oppressive and discriminatory practices often employed in that process. More modern intelligence tests and "scholarly" works such as *The Bell Curve* (Herrnstein & Murray, 1994) have assisted in promoting views of racial/ethnic disparity and thereby supported and fostered discriminatory stereotypes. These stereotypes help form the foundation for racial and ethnic bias and prejudice which, in turn, has contributed to a wide range of discriminatory practices and policies, from slavery, to unfair hiring, to current perceptions of criminality.

This dramatic, pervasive, and long running example of the caustic impact that can result from slippage serves to highlight again the essential nature of the connections among research and policy/practice/perception. There can be no debate that we (most especially in Western cultures) value science as a (if not the) principal source for information about our world and that we look to science to inform our decisions, policies, and practices. Also, science greatly helps to shape our cultural view of the world and how it and its inhabitants' function.

There has been much written, across disciplines, about the link between theory and practice/policy, and this link is of course mediated by the connections between theory and research. In addition to the theory, research, policy interconnections, there also are the more direct connections between practice/policy/programs and research, in the form of evaluation and outcome type research. Also, there is the entire realm of “applied” research in which we endeavor, through the methods of science, to address real world issues, to arrive at solutions to real problems. In all of these instances, the research, regardless of form, rests on a foundation of constructs, which must be operationalized to test the theory, evaluate the program, and/or solve the problem. If things get lost or altered in the translation from theory/construct to research/operational definition, then the data generated will not fully represent the construct in question. In turn, the data cannot fully inform policy or practice. At best, the data may lead to ineffective policies or ineffectual solutions, but in many cases, as illustrated above, the impact can be more negative and destructive.

There are numerous criminological examples of problems resulting from slippage, but for the purposes at hand we will look at one enduring and broadly applicable illustration. As our system of punishment rests on deterrence theory, assessments of the effectiveness of our policies and practices therefore utilize deterrence as the outcome variable. It would seem safe to conclude that there is, more often than not, considerable slippage between the construct of deterrence as traditionally defined and the ways in which it is most often operationalized. Deterrence (*specific deterrence*, to be precise) has generally been defined as the process of discouraging individual criminal defendants from becoming repeat offenders specifically and discouraging others in society from engaging in criminal activity generally. Looking at specific deterrence, what is in question is the future performance of the same or similar behaviors for which a given individual has already been punished. The operational definitions of the dependent variable that are often employed are re-arrest or re-conviction, both of which create conservative estimates of the actual level of re-offending, and thereby overestimates of the impact of our selected versions of punishment as a deterrent. It seems feasible that specific policies such as three strikes laws and also more broad approaches like the multiple wars on drugs may in part be attributable to mis-measures of the deterrent impact of punishment generally and incarceration more specifically. (Deterrence theory also provides an example of inadequate explication of constructs in that conceptualizations of the decision-making process involved are often rather oversimplified.)

To conclude this section, if we will allow that there is a somewhat pervasive problem with slippage and that this problem does carry real world implications and dangers, then the next issue becomes what can be done to address this risky and challenging state of affairs. We (and others as cited above) believe that this problem is in very large part rooted in our current, limited view of what constitutes appropriate research/science. If this is so, the solution then rests with developing and adopting deeper and broader models of science and research that can support more fully explicated constructs and that will provide methodologies sufficiently complex and complete to more adequately “measure” these constructs.

Deep Science, Alternative Methodological Models, and Construct Validity

Robert McGrath (2005) begins his article “Conceptual Complexity and Construct Validity” with the following observation:

Despite a century of methodological and conceptual advances in the technology of psychosocial measurement, poor correspondence between indicators and the constructs they are intended to represent remains a limiting factor to the accumulation of scientific knowledge. Longstanding conventions in measurement may contribute to the failure to develop optimal criteria. (p. 112)

While McGrath is examining this issue within the context of personality assessment, the fundamental points are equally applicable in criminological research. In fact, Walker (2007) offers a similar indictment of criminology specifically when he notes that “[F]or over a century, criminological research has been able to explain a consistently small amount of the variation in crime. It is plausible that the problem with criminological theory is not in the theory but in the analysis” (p. 555). With a few minor incursions, the prevailing view of science and methodology has been and is decidedly a modernist view. A number of authors (see for example Quinney, 1991; Martin, 1993, 2000, 2006; Martin et al., 2004; Williams, 1984, 1999; Gibbs, Giever, & Pober, 2000; Braswell & Gold, 2008) have claimed that this prevailing modernist bent has mired criminology in very narrow and incomplete views of the world. A common theme permeating these works is that this myopic vision of the world is attributable to the discipline's deep entrenchment in modern science, which has been referred to as “flatland” or the “disaster of modernity” (Wilber, 1998, 2000a, 2000c). Without getting into a lengthy discussion, this conceptualization basically refers to the collapsing of the interiors into exteriors, thereby creating a flattened view of reality and the world, a world of only surfaces and matter. In the Modern era, *scientific materialism* came to be seen, not as one of the ways of knowing, but as the only valid way. From this perspective, matter and body, but also soul and spirit, can be “thoroughly and rudely reduced to systems of matter alone...matter would account for all of reality, without remainder” (Wilber, 1998, p. 13).

Let us be clear, this commentary is not intended to be a general indictment of science as a way of knowing (nor certainly as a condemnation of evil against scientists). Science constitutes an important domain of knowledge, and it is an important part of how we apprehend the world. Science itself is not the problem; the problem is the narrow and shallow view of science that we have adopted and continue to practice. In Fritjof Capra's (1983) widely cited book, *The Turning Point*, he cautions that a science based solely on measurement and concerned only with quantity is inherently unable to accommodate experience, quality, or values. Overreliance on narrow empiricism creates a “tautological position” in which knowledge comes to be equated primarily (if not exclusively) with that which is measured (Williams, 1984). Even in their seminal work on construct validity, Cronbach and Meehl (1955) noted that “[T]he integration of diverse data into a proper interpretation cannot be an entirely quantitative process” (p. 300).

Of course, movement too far in the opposite direction would be equally problematic. In other words, while an exaggerated reliance on quantitative (i.e., surface/exterior) methods of inquiry represents a myopic and reductionist approach, so too would an exaggerated reliance on qualitative (i.e., depth/interior) methods of inquiry. The goal is to develop and adopt meta-frameworks that allow for the inclusion of a wider range of methods, in order to more completely explicate our constructs, more authentically align our operations with those constructs, and, ultimately, be more capable of enacting the full complexity of our theoretical models in order to more genuinely inform criminal justice practice and policy. To this end, we now move to a brief discussion of some meta-frameworks that are currently challenging the widespread reductionism found in criminology and other disciplines. One of these meta-frameworks was described earlier in relation to research on the study of gender in criminological literature. As was described above, the four quadrant-dimensions of the AQAL model provide the context of identifying the prototypical elements of our constructs. Simultaneously, the four quadrant perspectives provide the context for identifying and engaging appropriate methods in order to enact each of those prototypical elements. The AQAL model, therefore, can help to both identify slippage in existing research (as exemplified in the analysis of research on gender discussed earlier) and prevent slippage in future research.

In an explication of the philosophical underpinnings of the AQAL model,

Wilber (2006a; 2006b) introduced Integral Methodological Pluralism (IMP). Through IMP, Wilber recognized that each quadrant-dimension could be viewed from either the inside or the outside. For instance, we can view the interior-individual dimension from the inside, via some form of phenomenological inquiry, or from the outside, via some form of psycho-structural analysis. Through this distinction between inside and outside views, Wilber constructed 8 hori-zones representing the inside and outside view of each of the four quadrants (see Figure 1).

According to Wilber,

We inhabit these 8 spaces, these zones, these life-worlds, as practical realities. Each of these zones is not just a perspective, but an action, an injunction, a concrete set of actions in a real-world zone. Each injunction brings forth or discloses the phenomena that are apprehended through the various perspectives. (2006b, p. 35)

Each zone is also tied to a particular methodological family. It is important to note that these methodological families are presented as “placeholders” for a wide range of methods/injunctions designed to enact or bring forth phenomena associated with each of the zones of IMP. For instance, phenomenology as the study of one’s own interiors can be engaged with injunctions ranging from introspective journaling to transcendental

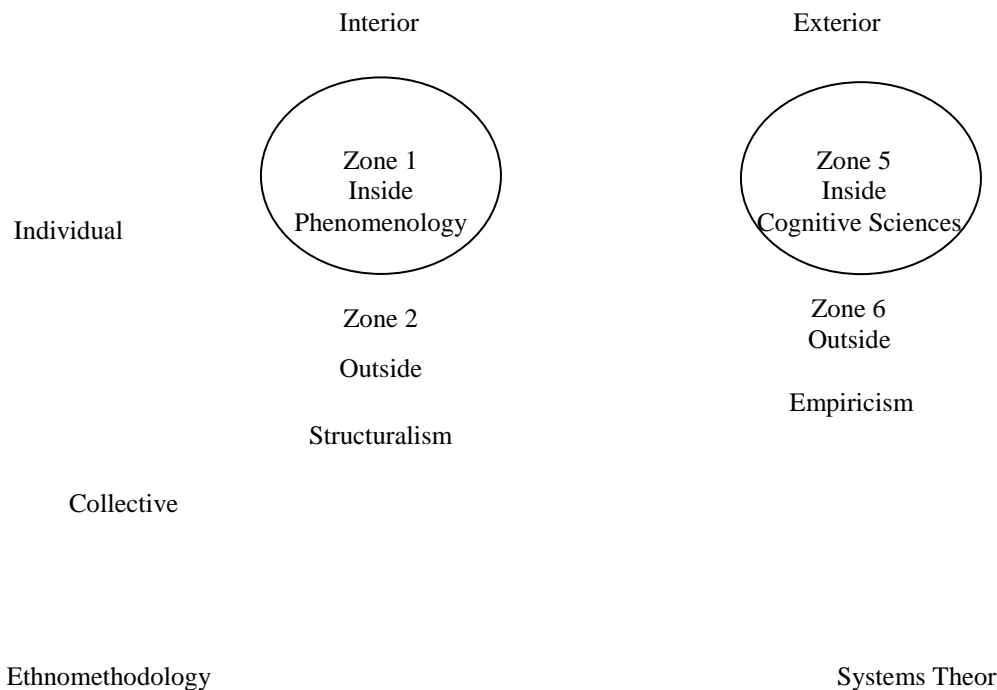


Figure 1: 8 Zones of Integral Methodological Pluralism meditation. In each instance, the steps of the process may be different, but in all instances the goal is to enact or bring forth an inside view of your own interior individual world space.

Three additional principles sit at the foundation of IMP and are relevant for our discussion of slippage. These are nonexclusion -the notion that each injunction/paradigm/practice can generate truth claims and valid knowledge, and therefore must be honored for its particular contribution; enfoldment -the notion that some practices/injunctions offer a more complete set of truth claims than others; and, enactment -the notion that all researchers bring forth the

worlds that they are studying because all researchers are operating from particular ontological and epistemological positions (see Wilber, 2006b; Esbjörn-Hargens, 2006). Each of these principles has implications for our understanding of science and our ability to shift from the current “narrow” or “shallow” science that sits at the center of the criminological endeavor to a “deeper” science that would help address many of the causes of slippage identified above.

Combined, these principles suggest that: 1) each injunction or method of inquiry offers a particular set of truth claims; 2) the relative validity of the truth claims generated from any particular injunction can only be evaluated in relation to the validity tests associated with the paradigms within which those injunctions are situated; 3) researchers who engage a particular injunction cannot make claims regarding the relative validity of truth claims generated through a different injunction; 4) researchers must recognize the limitations of their own injunctions in order to also recognize the relative validity of their truth claims; 5) researchers must align their chosen injunctions with the experiences they are attempting to enact, bring forth, or disclose so as to avoid slippage; and, 6) as a discipline, we must begin to value and honor the relative contributions of a wider range of methods and their associated operations in order to fully capture the complexity of the constructs we study. Integral Methodological Pluralism (and the AQAL model) offers one framework through which we can deepen our understanding of and approach to science and its application within the criminological endeavor. Meta-frameworks like IMP can fully accommodate both quantitative and qualitative methodologies, and they also are considerably broader in terms of the kinds of methods that are deemed viable and appropriate, across and within domains/zones.

One question that may be raised is “how does IMP relate to what is presently being touted as multi-methodological or mixed methods?”. Many of the current models, while they do promote the use of more than one operation or method, do not represent what we consider to be mixed methods. From an IMP framework (see Fig. 1 above), to be truly mixed methods would require working across multiple zones, and ideally also including both inside and outside views. Much of what is being presented as mixed methods in the current criminological literature employs multiple operations, but very often from the same zone, usually zone 6. If they are methods from multiple zones, the range is still often restricted to a mixing of only right side/exterior zones, without bringing in the interiors. Or, if we do see a mixing of interior and exterior (Left side and Right-side zones), the strong tendency is to include only the outside views (zones, 2,4,6,8). This latter approach is certainly a deeper view, but still does not capture the full or adequate depth, as all inside views are left out.

Again, the single biggest contributing factor to this methodological miasma is the predominant, modernist view of science, which is shallow and narrow. This ideology⁴ of science forces us into a highly constricted view of what can be considered viable and valid methodologies. As a result, rich and deep constructs are forced through this “sieve of legitimate science” and what often comes out is only the conceptual dust; the meat and marrow are left behind. In order to move beyond the current dilemma with construct validity, we will need a model for a broader and deeper science; we will need an Integral meta-framework. Integral Methodological Pluralism derives from an Integral view of science.

Generally speaking, the Integral view of science consists of the three strands of valid knowing (injunction, apprehension, communal checking). In discussing Integral Science, Wilber (1983, 1998, 2000c, 2006a) has distinguished traditional and higher science, narrow and broad science, and shallow and deep science. Narrow (or shallow) science is what we often call “the hard sciences,” such as biology, chemistry, and physics. It is based mostly on the exterior, physical world and restricts its use of the three strands to sensory experience only. Broad science, on the other hand, relates to “experience in general (sensory, mental, spiritual);” it applies the three strands to all direct experience and evidence. The broad or deep sciences are sometimes referred to as the human or social sciences, which attempt to apply a “scientific” approach to the study of human consciousness/development. Unfortunately, there has been some confusion between the “two sciences,” in that

⁴ We use the concept of ideology here intentionally to capture the notion set forth by Cronbach and Meehl (1955), in their seminal assessment of construct validity, when they said that “[C]onstruct validity is not to be identified solely by particular investigative procedures, but by the orientation of the investigator” (p. 282).

the human sciences very often “merely ape” the narrow sciences in their methods, which is of course problematic (Wilber, 1998, 2000c).

It is narrow science that is the disaster of modernity, the bulldozer that created the Flatland. Modern empirical science erroneously rejected the interiors, simply because they could not be seen by focusing the three strands only on the sensory. However, the interiors are accessible, but to broad or deep science, not to narrow. They are accessible through the appropriate interior methodologies but cannot be validly viewed via exterior methodologies. They cannot be collapsed into exteriors and maintain their true depth of structure or meaning. Adopting an Integral meta-framework would provide the foundation and structure for the development of a broad science of all quadrants/perspectives, a deep science of both interiors and exteriors, a science that honors inside and outside views of all domains without privileging one over any other. We need a broad and deep science that can “...guide our search of each domain, without the necessity to deform one domain to make it ‘compatible’ with the others.” Also, “the three strands of deep science *separate the valid from the bogus in each quadrant...*” The adoption of deep science “...*simultaneously* gives to empirical science its nonnegotiable demand that the scientific method be employed for truth accumulation, yet also relieves narrow science from its imperialism by pointing out that the scientific method can apply as fully and as fruitfully to broad empiricism.” It allows each domain, its own dignity, logic, architecture, form structure and content, while uniting the domains “by the thread of direct experience and evidence, a deep empiricism that grounds all knowledge in experience and all claims in verifiability” (Wilber, 1998, p. 176).

“If criminal justice/criminology is to truly advance in research and analyses, we must look to new methods of examination, not simply attempt to do a minimally better job at the things we have been doing for almost a century” (Walker, 2007, p.

556). We “must” move away from our shallow, linear, surface models toward “...methodologies that are more appropriate for the study of complex human behavior” (Walker, p. 557). Williams (1999) dramatically captures the imperative nature of the need to shift to new methodologies when he observes that “...existing mainstream approaches are virtually bankrupt in their ability to tell us much about crime and criminality. We desperately need a new paradigm or new perspectives by which to view our subject” (p. 113).

Of course, it must be acknowledged that the move toward a deeper more integral science will not totally eliminate slippage. There will always be some gap between what we can conceptualize and our abilities to translate that into operations/measures. However, working from a more complete and sufficiently complex paradigmatic framework will move us closer to operationalizations that more fully and deeply represent our constructs and thereby reduce slippage and enhance our understanding.

Truth in Advertising and Criminological Research

There is one more lens through which we would like to look at the problem of slippage and construct validity, to add some more depth to our analysis and to provide a slightly different take on the issues. This is a somewhat unusual analytic schema, but we believe it helps to further drive home the points made above about the implications for slippage and the need to adopt appropriate scientific/research frameworks.

There has been concern over false advertising since humans began to exchange goods and services (see Keller, 1996 for a historical overview of truth in advertising legislation and regulations). At the core of this longstanding concern is the fundamental belief that it is professionally and ethically required that sellers be honest about their products so that buyers are not deceived. According to the Federal Trade Commission (1983), “certain elements undergird all deception cases.”

The FTC “...will find deception if there is a representation, omission or practice that is likely to mislead the consumer acting reasonably in the circumstances, to the consumer's detriment” (para. 7). There also are federal laws prohibiting “bait advertising” and bait and switch practices. Under Sec. 238.2 of CFR Part 238, it states that “[No] statement or illustration should be used in any advertisement *which creates a false impression* of the grade, quality, make, value, currency of model, size, color, usability, or origin of the product offered, or *which may otherwise misrepresent the product* in such a manner that later, on disclosure of the true facts, the purchaser may be switched from the advertised product to another” (FTC, nd, italics not in original).

The issues surrounding truth in advertising provide an interesting analogy for examining the current state of affairs relating to slippage between criminological concepts and the operationalization of them. Given the pervasiveness of slippage and given the potential harm that can derive, we must ask ourselves whether we are accurately representing our “product” to our consumers, our social institutions and society at large. We need to seriously consider to what extent we may be “misleading the consumer,” “misrepresenting the product,” and “creating false impressions.” We also must recognize that to do so can very well be to the “consumer’s detriment.”

Also, it should be noted that, just as the Better Business Bureau (2012) and the FTC have enjoined sellers to practice sound ethics in their enterprises to protect against false advertising and other violations of public trust, in criminology, we too recognize our ethical responsibilities. Given the high expectations of the discipline and also given the gravity of many of the real-world issues that we do address, it is imperative that we be meticulous and cautious in our research efforts. To this end we have developed an extensive and intricate set of ethical guidelines which we are “required” to follow in pursuing our research and also in reporting our findings.

The Academy of Criminal Justice Sciences (nd) lists 22 obligations/requirements for conducting ethical research and being an ethical researcher. These requirements cover a wide range of areas relating to the research enterprise, and all are important. For the current analysis, the requirements that seem to be most salient are those that relate more directly to the reporting of findings:

2. Since individual members of the Academy vary in their research modes, skills, and experience, they *should acknowledge the limitations that may affect the validity of their findings.*

3. In presenting their work, members of the Academy are obliged to fully report their findings. They *should not misrepresent the findings of their research* or omit significant data. Any and all omitted data should be noted and the reason(s) for exclusion stated clearly as part of the methodology. *Details of their theories, methods, and research designs that might bear upon interpretations of research findings should be reported.* (italics added)

We have identified these two specific ethical guidelines as they hit at the crux of the issue of slippage. Given the high levels of slippage found between the conceptual and operational definitions reported in the criminological research literature, it would seem to be questionable as to whether these two guidelines are being consistently satisfied. We believe that the slippage is in fact a serious limitation that does affect the validity of the findings and conclusions of the studies that fall victim to it. As such, when the findings are presented, there is misrepresentation about what was actually measured and what that means about the original concept(s) of interest. Of course, this further translates into potentially deleterious impacts on policy and practices, which then ultimately are based on misinformation and misperception.

It must be noted that, with this analysis, we are in no way implying that researchers in the discipline are willfully adopting and pursuing unethical practices, quite the contrary. With very few exceptions, we believe that our discipline is populated with professionals of high ethical character and standards. However, we do think that the current dominant ideology of science and the resultant dominant paradigms are putting our research efforts on shaky ground in terms of construct validity and therefore subsequent truth/value.

Discussion and Conclusions

The main purposes of this examination of the issues surrounding slippage and construct validity have been threefold: 1) to raise serious questions about the ideology of science that permeates and dominates in criminology and to call for an expanded and deeper view; 2) to question the utility and viability of continuing to rely solely on

traditional methods in criminological research; and, 3) to introduce new meta-frameworks for science and research in hopes of stimulating movement towards paradigmatic change in the discipline.

John Law (2004) has observed that "...method in social science (and natural science too) is enacted in a set of nineteenth-or even seventeenth-century Euroamerican blinkers. This means that it misunderstands and misrepresents itself" (p. 143). One message that we hoped to impart is that it is critical, for the continued health and growth of the discipline, that we undertake a serious and honest appraisal of the current (and longstanding) state of affairs as it relates to our view of science and our research practices. Williams (1999) lamented our disciplinary stagnation noting that "[I]t is one thing for a field to begin the measurement of critical variables in a rudimentary fashion; it is entirely another for that field to maintain the same level of measurement some fifty years later" (p. 88). Criminology is in a quagmire of repetitively "...examining different concepts, using slightly different operationalization and propositions, and getting about the same level of variance explained" (Walker, 2007, p. 578).

In examining very similar issues to those raised here, Williams (1999) offers this telling commentary.

How can these things have happened and, once they have happened, why is it that we do not simply say our farewells and move along? Two major reasons come to mind. First, we have maintained the primacy of the same general approaches for so long that we rarely question the way they reflect on reality. Indeed, the extended primacy of the approaches means that we have built up a "scientific" language around them that, literally, *protects them* from questioning. Because language contains the symbols of thought, as we learn to think in a language it is those very linguistic conventions that shackle us. How do I come to this conclusion? Because I have frequently heard colleagues express the feeling that their data don't really seem to be accurate measures of what they are examining, but they continue to use them anyway. I have heard students express dismay that their experiences don't match our "objective" reality. And finally, I have sat in courtrooms, been in correctional facilities and police departments, and talked with "criminals" and I can assure you that the secondary data collected in those situations do not reflect the actual situations. The second reason for continuing the status quo is literally that we have too much invested in the current epistemology. (p.75)

In the academy we have been quick to criticize the public and the media for "their inaccurate perceptions of the crime problem and for allegedly misinformed opinions about crime and criminal justice" (Braswell & Whitehead, 1999, p. 61). It is time that we turned such a critical eye on ourselves. As a discipline we are "...still far short of explanations that can inform policy" and "reduce crime..." (Walker, 2007). If the discipline of criminology is to move effectively through this new millennium, if we are to develop into a social science that can meet the needs of a changing and complex world, we must alter our perceptions of good science, learn new languages, throw off the shackles of convention (and comfort), and adopt new methodologies. We must review our investments in the "current epistemology" and decide whether they can actually sustain us through the present and into the future. In short, we must transform as a discipline.

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