

Behavioral Measurement Database Services

Enriching the health and behavioral sciences by broadening instrument access

Vol. 4, No. 2 Spring 1997

About This Newsletter... Transitionally Speaking

Robert Perloff, Guest Newsletter Editor

Introduction

After I agreed to offer a segue or transition into the three innovative articles constituting the substance of and written especially for this issue of The Behavioral Measurements Letter (Volume 4, No. 2, Spring 1997), a question leaped up at me: what exactly did this issue segue from? How is this issue of the Behavioral Measurement Database Services (BMDS) semiannual newsletter different from the issues preceding it? Raising this question is no idle distraction from the business at hand, for this question mandates, necessarily and desirably, that the newsletter and its parent, BMDS, be identified and explained for new readers as well as for our friends and colleagues who have been with us since the newsletter's inception some four years ago.

The principal offspring of BMDS is HaPI [the Health and Psychosocial Instruments (hence HaPI, get it?) database]. HaPI's function, expressed in the sidebar to the newsletter title, above, is "Enriching the health and behavioral sciences by broadening instrument access," a double-duty enrichment serving as an icon both for HaPI and for the newsletter.

HaPI, available online through OVID Technologies (an international vendor of databases) and now obtainable as a CD-ROM from BMDS, contains over 45,000 records of interest to psychologists, physicians, nurses, social workers, educators, evaluators, sociologists, administrators, other health and

Vol. 4, No. 2, Spring 1997

behavioral scientists, and students. From widely recognized to obscure and unpublished, these instruments include questionnaires, interview schedules, coding schemes, observation checklists, rating scales, tests, project techniques, and measures using vignettes or scenarios.

Information Brought to Light: Most instruments are "buried" in avalanches of published literature and are hence difficult to discover. Worse still, scientists in one field (e.g., psychology) may be unfamiliar with instruments in other fields (e.g., medicine, nursing, public health). The majority of users do not have access to instruments that either have been recently developed or are described in unpublished manuscripts. These measures are generally known only by people in a particular field or subspecialty. By maintaining information on instruments from these diverse sources, HaPI enables users to retrieve relevant measures about which they might otherwise be unaware. Thus, HaPI helps researchers avoid "reinventing the wheel." HaPI places existing information on measurement instruments at users' fingertips, no farther away than their keyboard.

What and Why is the Behavioral Measurements Letter?

The Behavioral Measurements Letter, a semiannual newsletter, is devoted to the exploration of timely measurement topics. The Behavioral Measurements Letter is published by Behavioral Measurement Database Services, producer of the Health and Psychosocial Instruments (HaPI) database.

The impetus for this newsletter sprang from BMDS's belief in the paramount importance of

Introduction (Continued)

measurement. Just as in the physical sciences, advances in the health and behavioral sciences are proportional to advances in measurement. As Robert Pool stated in the case of the physical sciences, "These advances are vital, because science's understanding of the physical world is necessarily limited by the accuracy with which science can measure that world": (Science, 1988, 240, 604-605).

Earlier Editions of the Newsletter (Where we are Seguing From)

The first three volumes of the newsletter and No. 1 of Volume 4, while not bereft of substantive articles ("Finding the Right Measure," "Clinical Measurement for Primary Care," "Faith in Measurement," "Ways to Measure Demographic Variables," "In Memoriam—Donald T. Campbell," "Measuring Reminiscence in Research on Type A Behavior," "Beck Depression Inventory") were quite appropriately devoted to housekeeping items and articles establishing the impetus for the newsletter in the first place ["HaPInings," "HaPI Thoughts" (the lighter side), "Instrument Update," and related developments pinpointing changes in and new features of HaPI].

Seguing Into...the Transition

When the newsletter was inaugurated there were 18,000 records; this has increased 150%; in less than four years, to 45,000 records. First, a highly popular feature with users has now been established as part of HaPI's repertoire: document delivery of instruments. Next, probing in this issue, beneath measurement's first layer of information, are "something old" (Fiske's article) and "something new" (the articles by Pfau and by Bryant). The "old" is a review by Donald W. Fiske of the celebrated classic of his and Donald Campbell's on the multitrait-multimethod (MT-MM) matrix, a measurement breakthrough whose significance is attested to by its thousands of citations. The question these "hall of fame" measurement psychologists sought to ask is whether the determination of a psychological phenomenon or trait or behavior is due fundamentally to that trait explicitly or is the finding an artifact, rather, of the method used to

explore that trait? In Fiske's own words from his article in this newsletter, "Are there one or more methods that yield distorted patterns of correlations or correlational values that are much too low? Are there [rather] methods that generate too high correlations, correlations that cannot be accepted for the constructs as currently construed?"

The first "something new" is "Measuring Perceptions of Relational Communication," by Wisconsin communication professor Michael Pfau. Like the article by Fiske, Pfau's is significant and instructive because, in identifying a new dimension in communication—"relational messages," he is suggesting that communication behavior is well served by looking at implicit (nonverbal) as well as explicit communication. As a matter of fact, I was instantly struck by the importance and wide spread applicability of "relational messages".

In a separate communication, Pfau says that in his article he "focused on the relational communication measure, as opposed to a combination of communication measures, because it has unique potential in the health communication context to tap both verbal and nonverbal components of person perception, and it is relatively unknown outside of the communication discipline."

So here we have a powerful step up from what HaPI was a piddling three years ago and a step up, also, in the context of the BMDS newsletter. And this brings us to the second "something new," a new feature of the newsletter: illustrations provided in a new column, by Fred Bryant, starting with his maiden column in this issue: "The Comparative Anatomy of Related Instruments: an Emerging Specialty." Bryant's column brings the newsletter to a higher level of measurement breakthroughs and to a window of erudition providing more insight into measures and the concepts they seek to elucidate, where there is revealed "alternative measures of the same construct to determine conceptual overlap and uniqueness." This brings added value to the interpretation of measures as well as to decisions about what measures to use in a particular study. In this issue of the newsletter, Bryant's first column illustrates this procedure, using the construct of optimism.

Introduction (Continued)

Bryant seeks to determine whether and how alternative measures of the same concept leave us with a level of confidence that the concept is robust over different measures, in the same way that Campbell and Fiske, a half century earlier, sought to determine whether the results of research involving measured entities are attributable to the concepts underlying the measure or, instead, attributions to how the concepts are measured—which, of course, is what multimethod and multitrait are all about.

Thus, a more complex and sophisticated aspect of measurement is represented in the articles by Fiske, Pfau, and Bryant: an understanding not only of specific measures themselves—in an absolute and insulated way—but rather of where the measure stands with regard to other factors (the method used to measure concepts in the case of Fiske and of Bryant, and in the case of Pfau a treatise on "relational communications," which can be communicated verbally as well as, and especially, <u>nonverbally</u>, along side of other verbal contents. We are confident that you will enjoy these three articles—and feel that their perusal was worthwhile.

So, retreating full circle, this is what *The Behavioral Measurements Letter* was and what it has evolved into. We hope that you will give a "thumbs up" to the newsletter's modest contribution to the measurement enterprise and will yourself be propelled to offer articles for enriching *The Behavioral Measurements Letter*.

Robert Perloff, PhD, is Distinguished Service Professor Emeritus of Business Administration and of Psychology at the University of Pittsburgh. He has been president of many national professional and scientific societies including the American Psychological Association, the American Evaluation Society, and the Society of Psychologists in Management. Earlier in his career, Dr. Perloff was Director of Research & Development at Science Research Associates. He has just concluded a 3-year term as a member of the American Psychological Association's Board of Scientific Affairs.

The Method in MT-MM

Donald W. Fiske

The multitrait-multimethod (MT-MM) matrix is now part of the common methodology for research psychologists studying individual differences. The inspiration of the late Donald T. Campbell, it will be included in the training of psychologists for years to come. The basic idea is straightforward: a researcher should design his studies so that he has measures of his essential variables by more than one method. In other words, his research should involve the correlations among several traits, each measured by the same set of methods. As the necessity of using several methods becomes more generally accepted, the field of individual differences should gain. There is some question, however, whether the published matrices are improving over the dismaying set included in the original article (Campbell & Fiske, 1959, Psychological Bulletin, 56, 81-105).

That paper has had a record-breaking citation rate and is still receiving more than a hundred citations a year. The wide range of journals in which it is being cited suggests that its message is spreading widely. Some of the citations are probably in papers by methodologists who continue to work on the problem of statistically analyzing the MT-MM matrix.

Apart from any such analyses, much can be learned about the constructs measured and the methods used by a close examination of each matrix one obtains. Answers can be sought for a number of important questions. For each construct (trait or other type of variable), is it being measured differently by the several methods? Is the level of association compatible with the investigator's conceptualization of that variable or does it indicate appreciable method variance (unwanted variance due solely to the particular methods)? Are there one or more methods that yield distorted patterns of correlations or correlational values that are much too low? Are there methods that generate too high correlations, correlations that cannot be accepted for the constructs as currently construed?

Of course, one's research field may not enable one to set up a design with several traits or

Vol. 4, No. 2, Spring 1997

The Method in MT-MM (Continued)

constructs, each being measured by several apparently highly diverse methods. Even so, one can measure each central construct in the research plan by at least two methods. Correlations between two methods of measuring can be illuminating. Correlations between two constructs measured by just one method seem useless. If any of the constructs can be measured only by just one method, beware! The construct may be inextricably embedded in the method.

The MT-MM matrix can help us discard a method or a construct that is not useful. We are quite willing to discard a method when we find flaws in it, when it generates weak and unreliable data, when method variance overwhelms construct variance. But we sail along happily with our constructs, until an MT-MM matrix shows that they are too specific to the method used to measure them. Or we may find that our pet or fledgling construct overlaps highly with another construct, for each of several methods. An interesting case study is "social intelligence." In the twenties, an effort was made to measure this construct, which seemed like a reasonable one. But efforts to measure it yielded scores that were so highly correlated with general intelligence that it could not be considered a separate variable. [Editor's Note: One cannot help but wonder whether a similar fate awaits Daniel Goleman's (1995) articulation of "emotional intelligence" (New York: Bantam Books).

The major focus of the "Convergent and Discriminant Validation" paper and of this note is on method. We can reformulate constructs as our results require, but what can we do about our methods? Sometimes we can improve them, but more usually a bad method has to (and therefore should) be discarded. Psychometricians are familiar with the several sources of possibly intrusive variance in ordinary testing, such as the items, the instructions, the examiner, and the reason for the testing session. All of these are within the testing room, the standard context well known to psychometricians. What about other contexts or situations? For each context, one can prepare a list of components or features of that context, each of which could potentially affect the measurements obtained in the given context. For a construct that you have studied, what are the one or more contexts in which you must study it? The most convenient, most readily available context, such as a laboratory bench or a psychology classroom, may not be a wise choice. Mating behavior in the laboratory cage is quite different from the behavior observed in a simulation of the natural environment in which rats mate (McClintock, 1981, New directions for methodology in social and behavioral science, San Francisco: Jossey-Bass).

Our problem is not specific to psychology or the social sciences more generally. Recently I learned that studies of the Golgi material in cells yield somewhat different results, depending upon the discipline to which the researcher adheres, as a consequence of training and practice with a given set of tools. The two sets of results are simply disparate, not contradicting each other but at the same time not mutually supportive of each other.

In other instances in the natural sciences, the situation is quite clear and clean: e.g., in the measurement of temperature, there are a score of different methods, there are conceptual linkages among them, and they agree with each other very well (especially in terms of our standards). So when temperature is being measured, our problem does not get in the way.

An examination of the measurement of temperature may throw some light on our problem. Temperature has a variety of effects and there is some theory about each effect. So the physicist can apply a piece of general physical theory to provide a conceptual basis for each method of measuring it. Most of the physical theory relevant to temperature seems to be pretty well agreed upon by physicists. Unfortunately for us, we do not have such an agreed upon general theory in psychology, or at least not enough to provide a basis for a theory of measuring, a theory of method. (Psychometric test theory does not throw light on the underlying problems.) So we need to develop conceptual formulations about measuring that we can test empirically to see which ones need to be modified. Until such theorizing has been worked out and tested, we can use the MT-MM matrix as a prop. If we believe that a substantive construct should be constant over a set of methods for measuring it, we can apply those methods to that construct and see what happens. If the methods agree, that's great. If they don't, then either the methods or

The Method in MT-MM (Continued)

the conceptualization of the construct must be changed.

Perhaps the solution to this problem is to label each set of measurements not only by the substantive, conceptual core but also by the method by which they were obtained. We already do this for self-ratings as opposed to peer-ratings and for intelligence as measured by the Wechsler or as measured by the Stanford-Binet.

The pervasiveness of method has been known for centuries. Shakespeare has Polonius say of Hamlet's strange behavior, "Though this be madness, yet there is method in't."

Officially retired in 1986, Fiske is now almost completely retired from the frenetic world of actual research and scholarship. At the University of Chicago from 1948, the time of his doctorate at the University of Michigan, he worked on many problems, not solving any of them but contributing to our understanding of the problem and its consequent reformulation: intraindividual variability over time; our overreliance on words as stimuli, responses, and in instructions; rater-judge effects; and — most central of all — the method problem.

Staff

Director	.Evelyn Perloff, PhD
Document Delivery	
Coordinator	.Johanna Kehler, D Phil
Technical Specialist	.Linda S. Perloff, PhD
Editorial Specialist	.Philip Mabry, PhD
Newsletter Editor	.Al K. DeRoy, PhD
Computer Consultant	.Alfred A. Cecchetti, MS
Computer Programmer/	
Analyst	.Iain F. Cameron, M Div
Measurement Consultant	.Fred B. Bryant, PhD
Information Specialist	.Kim Chrobak, MLS
Record Analysts	.Daniel Moore, MA
	Julia Peters, MA
Record Reviewer	.Jacqueline A. Reynolds, BA
File Processor	.Betty Hubbard
Business Services Manager .	. Diane Cadwell

Measuring Perceptions of Relational Communication

Michael Pfau

Relational communication is an intrinsic element in person perception. Judy Burgoon and Jerold Hale, who did the pioneering work developing and testing the relational communication scale, describe relational communication as signifying "how two or more people regard each other, regard their relationship, or regard themselves within the context of the relationship" (1984, Communication Monographs, 51, 193-214).

I called relational communication intrinsic because it occurs in all instances in which a communication modality makes possible either real contact, as in interpersonal communication, or perceived contact, as in mediated communication. People form relationships with others whom they encounter directly, and with those they experience indirectly (e.g., people they come to know via television). Horton and Wohl characterize the latter as "parasocial relationships" (1956, <u>Psychiatry</u>, <u>19</u>, 215-229), but to those who experience them, they are every bit as real as direct encounters.

Relational messages can be communicated verbally, as when one person says to another: "I like you," "I care about you," or "I trust you." However, they always are communicated nonverbally, accompanying other verbal content. As a consequence, relational messages are present in all communication transactions. When a physician describes treatment regimens to patients; television spokespersons urge adolescents not to smoke, drink, or use drugs; or politicians espouse health care policy; their spoken words carry a substantive message, but their nonverbals simultaneously express a relational message. Our research in the political and health contexts reveals that relational messages often overpower substantive messages in impacting receivers (e.g., see: Burgoon, Pfau, Parrott, Birk, Coker & Burgoon, 1987, Communication Monographs, 54, 307-324; Pfau, 1990, Journal of Broadcasting & Electronic Media, 34, 195-214; Pfau, Diedrich, Larson, & Van Winkle, 1993, Journal of Broadcasting & Electronic Media, 37, 275-292; Pfau & Kang, 1991, Communication Studies, 42, 114-128).

Vol. 4, No. 2, Spring 1997

5

Measuring Perceptions (Continued)

We have known about the presence of relational messages in human communication since Ruesch and Bateson's classic book in 1951 (Communication: The social matrix of psychiatry, New York: W. W. Norton). Later, when Watzlawick, Beavin, and Jackson observed that, "One cannot not communicate" (1967, Pragmatics of human communication: A study of interactional patterns, pathologies, and paradoxes, New York: W. W. Norton), they were stressing that people always communicate relational messages, regardless of the substance of their verbal message. However, precisely because relational messages contain both verbal and nonverbal components, the construct proved difficult to measure.

Burgoon and Hale (1987, Communication Monographs, 51, 193-214), conceptualized relational communication in a seminal article. They derived 12 relational communication dimensions based on a review of the extant literature on interpersonal and relational communication. Subsequently, they constructed and factor-analyzed 64 Likert items using 5-point strongly-disagree and -agree scales. Results revealed an 8-factor solution as optimal. The eight dimensions were: similarity/depth, composure, formality, immediacy/affection, receptivity/trust, equality, dominance, and task orientation. However, the results indicated that more abbreviated versions of the measure also were satisfactory.

Initially, the researchers used Likert scales because the relational communication instrument was intended as a self-report measure. However, the measure also has been employed as an otherreport (Burgoon, et al., 1987; Burgoon, Olney, & Coker, 1987, Journal of Nonverbal Behavior, <u>11</u>, 146-165), an observer-report measure (Burgoon & Newton, 1991, <u>Southern Communication Journal, 56</u>, 96-113), and has been adapted for use as a 7-interval adjective-opposite measure.

When employed in a health context, the measure was adapted, with less relevant dimensions removed, and the number of items for each dimension reduced. Burgoon and colleagues (1987) used 14 items to tap relational communication in a physician-patient context, representing these six relational dimensions: composure (physician was relaxed, calm, and poised while talking with patient), immediacy (the physician communicated warmth and involvement, and found the conversation stimulating), lack of dominance (physician didn't dominate conversation), informality (physician made the interaction very informal), receptivity (the physician was open to patient concerns, interested, and willing to listen), similarity (physician made patient feel similar, and treated them as an equal). Due to unreliability, lack of dominance and informality were measured as single items due to unreliability. Coefficient alpha reliabilities of the remaining dimensions ranged respectively from .69 to .80, indicating that relational communication, particularly the dimension of receptivity, exerted significant influence on patient satisfaction with physicians.

When employed in a mediated campaign's context, Pfau (1990) used 26 items which represented seven relational communication dimensions. Dimensions and scale items were: immediacy/affection (the communicator was involved, enthusiastic, interested, and warm), similarity/depth (communicator revealed depth. similarity, caring, and friendliness), composure (communicator was relaxed, comfortable, poised, and lacked tension), receptivity/trust (communicator was sincere, honest, interested in communicating, and seemed willing to listen), informality (the communicator displayed informality, equal status, and casualness), lack of dominance (communicator didn't come off as taking the upper hand, manipulative, controlling, or pressing influence), and equality (the communicator was cooperative, displayed equality, and didn't convey a superior attitude). The informality measure was dropped due to inadequate reliability. Reliability ratings of remaining dimensions ranged from .60 to .83. The results of the study of communication modalities in campaign influence revealed that relational communication in general, and the dimensions of receptivity/trust and similarity/ depth in particular, exercised considerable influence across modalities.

The relational communication instrument is quite promising. It uniquely taps both verbal and nonverbal components in person perception. It is adaptable to both direct and mediated contexts.

Measuring Perceptions (Continued)

Finally, the relational communication measure appears to be both valid and reliable. Burgoon and Hale (1987) conducted a number of tests demonstrating validity for their relational communication instrument. Further, the relational communication instrument has achieved improved reliability ratings in recent studies.

Michael Pfau is Professor and Director of Graduate Studies, School of Journalism and Mass Communication, the University of Wisconsin—Madison. He has authored or co-authored four books and more than 50 articles and book chapters. His research interests involve mass media influence, particularly in the health and political contexts.

HaPI Advisory Board

Aaron T. Beck, MD University of Pennsylvania School of Medicine

Timothy C. Brock, PhD Ohio State University, Psychology

William C. Byham, PhD Development Dimensions International

Donald Egolf, PhD University of Pittsburgh, Communication

Sandra J. Frawley, PhD Yale University School of Medicine, Medical Informatics

David F. Gillespie, PhD George Warren Brown School of Social Work Washington University

Robert C. Like, MD, MS University of Medicine and Dentistry of New Jersey Robert Wood Johnson Medical School

Joseph D. Matarazzo, PhD Oregon Health Sciences University

Vickie M. Mays, PhD University of California at Los Angeles, Psychology

Michael S. Pallak, PhD Behavioral Health Foundation

Kay Pool, President Pool, Heller & Milne, Inc.

Ellen B. Rudy, PhD, RN, FAAN University of Pittsburgh School of Nursing

Gerald Zaltman, PhD Harvard University Graduate School of Business Administration

Stephen J. Zyzanski, PhD Case Western Reserve University School of Medicine

Vol. 4, No. 2, Spring 1997

The Comparative Anatomy of Related Instruments: An Emerging Specialty

Fred B. Bryant

An exciting, new approach to construct validation is being pioneered quietly in the professional journals these days. Far away from the limelight, quantitative specialists labor silently in relative obscurity, systematically comparing alternative measures of the same construct to determine conceptual overlap and uniqueness, using stateof-the-art multivariate statistical tools. In this column, I briefly consider the wide-ranging benefits of this basic measurement thrust, and then spotlight illustratively a recent empirical example involving the construct of optimism as an illustration. In future issues of The Behavioral Measurement Database Letter, I will highlight this important measurement initiative from other research areas.

Although largely ignored in favor of more glamorous substantive research, this groundbreaking measurement contribution strengthens the foundation of empirical inquiry in several vital ways. First, comparative studies of related instruments fine-tune our understanding of exactly what our research instruments are measuring. Although multiple measures share the same conceptual "label" on the surface, they may well tap different aspects of the same construct or even different constructs altogether. Despite our tendency to judge books by their covers, the only definitive way to determine the degree of functional and conceptual equivalence across instruments is this emerging type of psychometric comparison. Such basic quantitative work better enables us to choose the most appropriate instruments for our research purposes. Next, another vital contribution of this basic measurement work is the improvement of conceptual clarity by identifying constructs that are truly unitary and by decomposing multidimensional constructs into their constituent parts. This conceptual dissection explicates the meaning of research constructs empirically, documenting how respondents react explicitly to the instrument instead of relying implicitly on the instrument's theoretical or intended structure. Multiple facets of conceptual variables can thus be identified and better understood, and gaps in

The Comparative Anatomy (Continued)

measurement coverage can be highlighted for future research. Finally, this type of measurement foray often leads to refinements in existing instruments, creating psychometrically-purified forms of the original measures for future use. These modified measures offer greater conceptual precision and better reliability.

A 1994 article by Edward Chang, Thomas D'Zurilla, and Albert Maydeu-Olivares, (Cognitive Therapy and Research, 18, 143-160) illustrates the benefits of a comparative anatomy of measurement instruments. Chang et al. (1994) sought to improve understanding of the construct of optimism by comparing responses systematically to three measures designed to tap this construct: (a) the Life Orientation Test (LOT; Scheier & Carver, 1985, Health Psychology, 5. 219-247); (b) the Hopelessness Scale (HS; Beck, Weissman, Lester, & Trexler, 1974, Journal of Consulting and Clinical Psychology, 42, 861-865); and (c) the Optimism and Pessimism Scale (OPS; Dember, Martin, Hummer, Howe, & Melton, 1989, Current Psychology: Research and <u>Reviews</u>, 8, 102-119). That is, it was hypothesized that optimism consists of life orientation, hopelessness, and optimism itself and pessimism.

These instruments differ in at least four ways. First, they each reflect different conceptual definitions of optimism. Specifically, life orientation (LOT) defines optimism as both positive and negative expectancies about future outcomes. Hopelessness (HS) in contrast, considers only negative expectancies about self and future, while optimism and pessimism (OPS) define optimism as both positive and negative views of life in general. Second, the three instruments are usually scored differently. Specifically, the LOT and HS are typically summarized in terms of a total score; whereas the OPS is typically summarized in terms of scores on separate optimism and pessimism subscales. Third, the instruments differ in their length. Specifically, the LOT consists of 12 items, the HS of 20 items, and the OPS of 56 items. Fourth, the instruments have different response-formats. Specifically, the LOT and the OPS use a Likert response-format, whereas the HS uses a true-false format. Thus, although the instruments have similar titles, they take very different forms.

Administering the three instruments to a sample of 389 college students, Chang et al. (1994) used confirmatory factor analysis to test whether responses to each instrument were more accurately represented by a single, total score or by separate subscale scores. Analyses indicated that: (a) the LOT had separate optimism and pessimism subscales that correlated -.52; (b) the HS was most accurately represented by a single, total score that assesses pessimism; and (c) the OPS had multiple subscales that confound optimism and pessimism with several other overlapping constructs. To improve measurement precision for the OPS, Chang et al. omitted all OPS questions that did not clearly reflect either positive or negative expectancies (leaving only 14 items), and found that responses to the remaining items could be accurately represented by separate optimism and pessimism subscales that correlated -.45.

Chang et al. found additional differences when they compared the psychometric properties of the three instruments. The distributions of scores obtained from the different measures were not equivalent. Nor did the instruments show equivalent levels of reliability—specifically, the OPS optimism subscale was less reliable than any of the other subscales and than the HS total score. Intercorrelating the various scale scores from these three instruments, Chang et al. found that the subscales of optimism and pessimism showed good convergent validity and modest discriminant validity across the instruments. These results clearly indicate that the three instruments do not yield equivalent information.

As another means of assessing the validity of the distinction between optimism and pessimism, Chang et al. examined the relations between (a) the various scale scores from the three measures, and (b) external criteria of grade-point average (GPA) taken from college records and self-reported level of psychological stress as measured by the Derogatis Stress Profile (DSP; Derogatis, 1980, The DSP: A summary report, Towson, MD: Clinical Psychometric Research). Whereas none of the optimism or pessimism subscales were significantly correlated with GPA, all correlations with DSP total score were statistically significant (i.e., higher optimism related to lower stress, higher pessimism, to higher stress). Subsequent analyses revealed that scores on the LOT optimism subscale had more

The Comparative Anatomy (Continued)

to do with self-reported stress than did scores on the OPS optimism subscale—a finding that seems to reflect the lower reliability of the latter measure.

Chang et al.'s findings challenge the traditional theoretical view of optimism and pessimism as polar opposites of a single continuum; and they demonstrate that the data from any one particular instrument should not simply be integrated with the data from a seemingly related instrument, unless there is evidence that the two measures are factorially congruent, that is, that they assess the same concept. Although all three instruments might appear at first glance to be equivalent, Chang et al.'s data indicate otherwise, and their results better enable researchers to make informed choices about instrumentation. Clearly, this type of "behind the scenes" measurement work shows great promise for enhancing conceptual and psychometric precision in the social and health sciences.

When science, art, literature, and philosophy are simply the manifestation of personality they are on a level where glorious and dazzling achievements are possible, which can make a man's name live for thousands of years. But above this level, far above, separated by an abyss, is the level where the highest things are achieved. These things are essentially anonymous.

Simone Weil

HaPI Thoughts



Services Database Measurement Behavioral The Behavioral Measurements Letter

SOM

PO Box 110287 • Pittsburgh, PA 15232-0787

DATED MATERIAL

In	This Issue:	
•	About This NewsletterTransitionally Speaking- Robert Perloff, Guest Newsletter Editor	1
•	The Method in MT-MM— Donald W. Fiske	3
•	Measuring Perceptions of Relational Communication—Michael Pfau	5
•	The Comparative Anatomy of Related Instruments: An Emerging Specialty— Fred B. Bryant	7
•	HaPI Thoughts	9

The

MEASUREMENTS Letter

BEHAVIORAL

Behavioral Measurement **Database** Services

Permit No. 1235 Pittsburgh, PA **DIA9** U.S. Postage Bulk Rate