

the score

Division Five: Evaluation • Measurement • Statistics

NEWSLETTER



INSIDE

Tony Puente Decodes the CPT Process: An Interview..... 1

Division 5 Award Nominations Due January 6..... 1

About The Score 2

E-mail Lists 2

Executive Officers and Committees 2

Position Available: WPS Project Director 3

Informative Hypotheses: Moving Beyond Classical Null Hypothesis Testing ... 5

STUDENT'S CORNER

Passionate About Research..... 7

HumRRO: Custom Solutions..... 8

Division 5 Membership Services 9

What's New 10

Advertise in The Score..... 11

Tony Puente Decodes the CPT Process: An Interview

By David Herzberg

Editor's note: Tony Puente is a psychologist with a large hat collection, so to speak. In addition to his day job (Professor of Psychology at University of North Carolina, Wilmington), Tony's many roles include a seat on the 17-member Current Procedure Terminology (CPT) Panel of the American Medical Association (AMA), the body that determines the procedure codes that control third-party reimbursement of psychologists, physicians, and other healthcare professionals. For example, when a psychologist conducts an assessment using the WISC-IV, and submits to an insurance company for payment, he or she must identify

the procedure using a particular CPT code (in this case, 96101).

Tony is the only psychologist on the panel, so it's no stretch to say that he represents the entire body of practicing psychologists in the crucial matter of how much they can bill for their work. His work, therefore, should be of interest to all psychologists who practice assessment, as well as developers and publishers of psychological tests.



Tony Puente

When and how did you get into this influential role on the CPT Panel?

In 1989, I was elected President of the North Carolina Psychological Association, and its Executive Director

questioned what I wanted to accomplish on behalf of psychologists. A primary interest was to establish a CPT code for neuropsychological testing, outside of the codes that existed at that time only within psychiatry. I worked with Blue Cross/Blue Shield of North Carolina and obtained a temporary code with instructions to contact the AMA—and this was my first interaction with the CPT Panel.



Division 5 Award Nominations

Reminder: The deadline for Division 5 award nominations is **January 6**.

Please email supporting letters and other nomination materials to Amy Schmidt, aschmidt@ets.org

(Continued on page 3)

The Score is the official newsletter of APA Division 5—Evaluation, Measurement, and Statistics—and is published quarterly in January, April, July and October. In keeping with this mission, *The Score* publishes the division's business meeting minutes, committee reports, and announcements.

In addition, where appropriate and space permits, short articles (800–1000 words) on technical issues and professional activities of Division 5 members, or on topics of current interest may be accepted. Brief announcements and calls for presentations related to conferences or meetings of particular interest to Division 5 members may also qualify. Submissions should be sent to *The Score* Editor, David Herzberg: dherzberg@wpspublish.com.

Submission deadlines are one month prior to publication: March 1 for the April issue, June 1 for July, September 1 for October, and December 1 for January.

The Score is published solely online and distributed via e-mail notification. Division 5 members receive the e-mail notice through the Division 5 DIV5ANN email listserv (see the box below).

Guidelines for advertising appear elsewhere in this issue. Paid advertisements are solicited from a variety of sources and are not officially endorsed by Division 5.

Guidelines for the “What’s New?” column are provided with the column.

Urgent announcements should be submitted to the Division 5 e-mail lists, described in the box below.

E-mail Lists

Keep up with the latest Division 5 news through its two e-mail listservs.

DIV5 serves as a vehicle for discussion among members on topics related to evaluation, measurement, statistics, assessment, and qualitative inquiry.

DIV5ANN is used exclusively for announcements from Division leadership regarding issues such as elections, calls for nomination to boards and committees, the convention program, or policy changes. This is a “one-way” listserv that does not support listwide replies (that is, it is not structured to support discussion). **All members have been added to the listserv, and new members are added as they join. We strongly encourage all members to remain on the listserv in order to receive the newsletter and other important division news. We promise to keep the number of messages to a minimum.**

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Tony Puente Interview

(Continued from page 1)

Then in 1992, the American Medical Association, which is the sponsor and owner of the CPT system, opened it to non-physicians for the first time, and added 12 new specialties, including psychology. I was invited to represent the American Psychological Association (APA) on the Panel, and I did so until 2008, when I ran for an actual seat on the Panel. I was elected, and am now in the first year of my second four-year term. Individuals who represent a society (such as APA) act as advisors to the Panel, which actually votes on proposals of the advisors. The Panel includes representatives from payers such as Medicare and Blue Cross/Blue Shield, as well as health-care providers, who are almost all physicians.

What is the process by which new codes are proposed, debated, and approved?

Any kind of procedure, whether it's medical or psychological, needs to be frequently used on a national basis to be considered for a new code. The procedure needs significant empirical support and a champion, which may be a partnership of commercial enterprises and professional organizations. Most proposals come from a joint

collaboration of several groups. There's an extensive peer-vetting process – for example, the procedure is presented to more than 120 CPT advisors for discussion. Then it has to pass muster in a public debate in front of the CPT Panel, which occurs three times per year at national meetings. The process is very costly and very political, and may last up to 10 years and include many revision cycles.

For example, at the most recent CPT Panel meeting in Los Angeles, a new code for brief psychological testing was proposed, discussed, and will be voted on at the next meeting. This effort stems from a revision of existing codes that were first proposed in the mid-1990s. The code is being discussed by psychology and a wide variety of physicians.

Why should assessment psychologists be more concerned about what goes on at these CPT meetings?

It's very simple: The CPT process has a direct effect on the practice of health care and professional psychology. This is the system that the federal government and healthcare industry use to set what are considered acceptable parameters around medical and psychological practice.

For example, many psychologists use technicians as part of their assessment practice. In order to bill for the technician's time, you

Project Director: Psychological and Educational Assessment Development

WPS invites applications for the position of Project Director to join the Department of Research and Development. WPS is looking for a research or clinical professional to design, develop, and prepare psychological and educational tests for the commercial market. The Project Director guides projects every step of the way toward publication, utilizing an array of skills in research planning and management, creation of test items, coordinating data collection, data analysis, technical writing and editing, and integrating technology in the design of test forms and software applications. Applicants should have completed their doctorate, and postdoctoral experience is desirable. Strong candidates can be assured of a supportive and collaborative environment for filling gaps and honing skills. The degree area of specialization is open (e.g., clinical, developmental, school psychology), but strong research and scientific writing skills as well as a demonstrated interest in quantitative methodology are a must. Experience in multiple practice settings (such as schools, hospitals, or clinics) is strongly preferred, and a background in autism is a plus.

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need a CPT code. We obtained this code approval in 1996; prior to this, the concept of “physician extenders” did not exist for psychologists.

Another important practice parameter is the idea that face-to-face contact with the client should precede actual testing. Because every client is unique, you need this interview time in order to choose the right tests. Thus, an interview precedes the actual testing. And that interview could be bundled with interviewing collaterals as well as reviewing of records.

Practice parameters—how a procedure can be done—are only one side of the CPT code. After parameters are set, the code goes to the relative value committee, which decides the reimbursement rate for the procedure. That valuation is then multiplied by a conversion factor keyed to GDP, which is set by Congress on a yearly basis.

As a psychologist, what unique contribution can you make to an organization that consists mostly of physicians?

In addition to being the only psychologist, I’m only the third non-physician in the history of the Panel, which was started in 1966. Because I’ve been part of this process for a long time, the physicians see me as a colleague and collaborator. They value my interests in conflict resolution, diplomacy, networking, and, I suppose, my resiliency. I’ve been co-chair of the surgery and plastic surgery committees, not because I have content knowledge in these areas, but because I can use my skills as a psychologist to assist the group in solving problems.

What many psychologists don’t understand is that we can have the same level of influence as Blue Cross/Blue Shield or Medicare to decide what health care gets done in this country and, indirectly, in the rest of the world. It’s a powerful advocacy role for our profession. What I’m most proud of is that within this physician-dominated body, psychologists now garner a high level of respect for our extensive training and experience, as well as our ability to provide a fresh perspective on health care.

Can the current set of CPT codes for assessment provide adequate reimbursement for computerized and online testing? Should psychologists and test publishers be concerned about this?

The codes in this area are still evolving, but my focus has historically been on getting psychologists reimbursed for what they are best at, which is thinking. The cognitive work of test interpretation is the unique value of psychological expertise. Even if you are using a computerized test, this cognitive work itself doesn’t fall under a computer-testing CPT code. And it’s important to understand the

distinction between time spent doing cognitive work, and practice expenses, which include the purchase of tests, whether they are printed or computerized. The CPT system is designed to be sensitive to practice expenses, so as the costs of testing increases (which may happen with computerized testing), the reimbursement rates also go up.

Based on your experience with the CPT Panel, what untapped opportunities do you see for the clinical test publishing industry?

Creating assessments outside of the traditional psychological realm is an interesting next step. Primary care is a good example. There is a need for screening in that environment, for example, cognitive screening to determine if a patient is showing deficits related

to a head injury. Physicians and other primary care providers need psychometrically sound instruments to help them do this level of screening. This screening would then result in a greater interface with psychologists, who tend to do more comprehensive assessments. In this way, new screening instruments would tend to promote the integration of psychology with all levels of health care.

How transparent is the CPT process—can the public attend these meetings?

It’s much more transparent than it used to be, but you still need an invitation to attend the annual meetings. I am always looking for ways to get my psychologist colleagues to pay more attention to the CPT process, and I’m happy to facilitate their involvement. However, when all is said and done, the real work is at the state and carrier level. Just because we make these changes at the national level does not mean that it will be translated into individual practices.

The meetings used to be completely closed, however. When I was the APA rep, I sometimes felt like I was testifying at a congressional hearing. They would make me wait in the hallway, sometimes

(Continued on page 11)

What many psychologists don’t understand is that we can have the same level of influence as Blue Cross/Blue Shield or Medicare to decide what health care gets done.

Informative Hypotheses: Moving Beyond Classical Null Hypothesis Testing

By A. G. J. (Rens) van de Schoot

Editor's note: Rens van de Schoot is the winner of the 2013 APA Division 5 Distinguished Dissertation Award, which recognizes an outstanding dissertation that was completed in the previous three years and addresses a topic in assessment, evaluation, measurement, research methods, and/or statistics.

In 1994, Cohen aptly summarized the criticism of traditional null hypothesis testing in the title of his paper “The earth is round ($p < .05$).” Let us elaborate on his criticism using an example inspired by this title. We'll imagine how Aristotle might have invoked informative hypothesis testing by pondering the shape of the earth (part of this example is based on Van de Schoot, Hoijtink, & Romeijn, 2011).

The question of the earth's shape was a recurring issue in scientific debate during the era of Aristotle. By that time, scientific thinking was dominated by the Greek idea that the earth was round. The only serious opponents were the atomists Leucippus and Democritus, who still believed that the earth was a flat disk floating in the ocean. Now let us embark on some historical science fiction to tell the story of how Aristotle, in his scientific investigations, might have used different ways of evaluating hypotheses. In order to falsify the old flat-earth hypothesis, Aristotle might have used an approach based on testing the traditional null hypothesis:

H_0 : The shape of the earth is a flat disk,

H_1 : The shape of the earth is not a flat disk.

Aristotle gathered data about the shape of the earth and found evidence against the null hypothesis. For example, stars that were seen in Egypt were not seen in countries north of Egypt, while stars that were beyond the range of observation in northern Europe were seen to rise and set in Egypt. Such observations could *not*

I want to thank APA Division 5 for providing me with the dissertation award. I would have loved to have presented my dissertation topic in person, but at the time of the APA's 2013 Annual Conference, my wife was about to give birth to our son. Therefore, I recorded a movie instead, which can be downloaded via my website: <http://rensvandeschoot.com/video/>. I also want to say a big thanks to my supervisor Herbert Hoijtink. More information about informative hypothesis testing can be found at this website: <http://informativehypotheses.wordpress.com/>.

be taken as evidence of a flat earth, leading to the rejection of H_0 and Aristotle's conclusion that the earth is not a flat disk. In fact, Aristotle agreed with Pythagoras, who believed that all astronomical objects, including the earth, have a spherical shape. So, once again embarking on an episode of imaginary history, Aristotle might also have tested:

H_0 : The shape of the earth is a sphere,

versus

H_1 : The shape of the earth is not a sphere.



A. G. J. (Rens) van de Schoot

Now, imagine that Aristotle continued his search for data and that he gathered evidence against the null hypothesis. For instance, while standing on a mountain top, he noticed that the earth's surface has many irregularities and concluded that if enough irregularities could be observed, this might provide just enough evidence to reject the null hypothesis. And so it might have happened that Aristotle once again rejected the null hypothesis, concluding that the earth is *not* a sphere. What can be learned from this conclusion? Not much! Both hypothesis tests rejected the null hypotheses, and we are still ignorant about the shape of the earth.

As a next step, following the Neyman-Pearson procedure of hypothesis testing, we could tentatively adopt the alternative hypotheses. This procedure tells us that the earth is neither a flat disk nor a sphere and consequently, we remain ignorant of the earth's actual shape. Admittedly, not all methodologists would agree on this point. In response to Aristotle's imagined disappointment, Popper (1959) would have argued that this insight is all that Aristotelian science, or any science for that matter, can hope for. Moreover, he would have argued that there is no way to prove that the earth is a spherical form by direct verification—we can only hypothesize that it has the shape of a sphere. However, because Aristotle found evidence demonstrating that the earth is not spherical, the sphere hypothesis is rejected. In fact, according to Popperian reasoning, Aristotle should rejoice in the fact that at least he now knows the earth is *not* a sphere!

What I think is that Aristotle was actually interested in evaluating informative hypotheses (Hoijtink, 2011):

H_A : The shape of the earth is a flat disk,

versus

H_B : The shape of the earth is a sphere.

In such a direct comparison, the conclusion resulting from confronting these hypotheses with observed data will be more informative. Obviously there is far more evidence in favor of H_B ! And, unlike in the previous examples of null-hypothesis testing, we learned something positive after all. What does this historical example teach us? Evaluating specific expectations directly produces more useful results than sequentially testing traditional null hypotheses against catch-all rivals.

Let us return to actual science. Researchers in the behavioral and social sciences have expectations that can be expressed in the form of inequality constraints among means or regression coefficients. Based on previous research, literature reviews, or the current academic debate, one can formulate order restrictions. If a researcher expects four means to be ordered, the informative hypothesis might be that the first mean is larger than the second mean which in turn is larger than the third mean, and so on. I argue that researchers are often interested in the evaluation of such informative hypotheses and already know that the traditional null hypothesis is an unrealistic state of affairs. This presupposes that prior knowledge is available; if this is not the case, there is nothing wrong with testing the traditional null hypothesis. In most applied articles, however, prior knowledge is indeed available. Shouldn't we use our prior information then? Quoting Jaynes: "If we humans threw away what we knew yesterday in reasoning about our problems today, we would be below the level of wild animals; we could never know more than we can learn in one day, and education and civilization would be impossible" (2003, p. 87). The big question is: Can we do any better than this? And the encouraging answer is: Yes, we can! My dissertation elaborated on this answer by detailing several alternative methods for evaluating informative hypotheses.

In brief, I provided an overview of the existing literature on testing informative hypotheses. Then, I compared classical null hypothesis testing with contrast testing and computing Bayes Factors (as derived in Klugkist et al., 2005). For the latter method I included a tutorial chapter where I introduce the method and its components. Thereafter, I developed a parametric bootstrap procedure for testing inequality constraints using plug-in p -values. Next, I showed that default model selection tools like the AIC, BIC, and DIC fail when evaluating inequality constraints. I derived a new model comparison tool based on the DIC, the *prior information criterion* (PIC), which is able to compare models with inequality constraints. And finally I included two chapters with substantive research questions where informative hypothesis testing has been applied to real data in the field of developmental psychology.

For example, together with Thessa Wong, I investigated the levels of self-concept (high or low) of delinquent young adults. Different expectations of low and high self-concept and antisocial behavior were evaluated using Bayesian model selection. The study dem-

onstrated that self-concept is related to delinquent behavior, and that males and females differ both in the strength and direction of the association. Furthermore, confirmatory Bayesian latent class analysis revealed that both high-delinquent and non-delinquent men and women fall into two groups: those with high levels of self-concept and those with low levels of self-concept. This pattern emerged across the 12 different domains of self-concept assessed. These results may help to explain inconsistent results of previous studies on the link between self-concept and delinquency.

Statistics have come a long way since the early beginnings of testing the traditional null hypothesis, which was usually formulated as "nothing is going on." If a researcher wants to use null

hypothesis testing, it is fine with me, as long as they use it in the correct way. However, I want to challenge researchers to move beyond classical hypothesis testing and use state-of-the-art methods to explore their expectations directly.

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Statistics have come a long way since the early beginnings of testing the traditional null hypothesis, which was usually formulated as "nothing is going on."

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Passionate About Research

By Colleen Siti

A PsyD student with a strong interest in research and assessment? Yes, we do exist! Before I delve into this seemingly contradictory statement I would like to take a moment to formally introduce myself. My name is Colleen Siti, and I am honored to be taking on the role of student editor of *The Score*. I am a fourth-year student in the clinical psychology PsyD program at Marywood University in Scranton, Pennsylvania.

I have been interested in assessment since my undergraduate career at Moravian College. As a junior at Moravian, I decided to take on an honors project focused on my clinical interests, that is, eating disorders. I initially had the ambitious idea of conducting research on a clinical population of individuals who have been diagnosed with an eating disorder. When I realized that my lack of access to a clinical population might render this idea unfeasible, I moved on to a broad review of the eating disorders literature in hopes of resurfacing with a new research topic. I fell into the rabbit hole of an intensive literature review and stayed there for months. During this time, I began to examine the assessment instruments and screening instruments that focus on measuring eating disorders. As I scrutinized instrument after instrument, I began to note a common theme: These measures were mostly self-report questionnaires that focused on a mix of attitudes, symptoms, and behaviors of eating disordered individuals. Since the publication of the first questionnaire developed to measure eating pathology, nearly 40 years ago, a plethora of instruments have been developed to assess disordered eating (Robert-McComb, 2001). Although the psychometric properties of most of the instruments used to measure disordered eating are generally good, I began to notice that such instruments were sometimes used beyond the scope of their intended purpose. For example, measures originally designed for a clinical population are often used for research purposes among non-clinical samples

of college-aged individuals (Thompson et al., 2004). Additionally, the assessments that I reviewed measured eating disorders across the whole range of symptoms, attitudes, and behaviors. There was no instrument that focused only on behaviors, which I perceived to be a gap in this field.

Individuals suffering from eating disorders often deny that they have a problem, and/or lack insight or understanding of their own feelings. I recognized that this phenomenon would pose a challenge for self-report measures of symptoms and attitudes. I found myself thinking, where can I find a more objective, behavior-based rating scale of eating disorders? Behavioral signs of eating disorders include specific behaviors that typically have to do with food, eating, and dietary habits. Behavioral symptoms tend to be the easiest to measure, because they are more directly observable and quantifiable (Micali & House, 2011; Tury, Gulec, & Kohls, 2010). This “light-bulb” moment marked the inception of my foray into assessment development.

I began the creation of what I now call, “Weight-Concerned Eating Behavior Scale” (WCEBS). The WCEBS was designed to measure behaviors common among women who are self-conscious

about their body shape, attempting to lose weight, or simply unhappy with their weight. It was designed specifically for women because research indicates that women tend to be more susceptible to eating disorders and negative body image than men (Striegel-Moore & Bulik, 2007). Though the rate of eating disorders among men appears to be on the rise, research suggests that their experience of disordered eating and body dissatisfaction differs from that of women. For example, men often exhibit a desire for both a low level of fat and a high amount of muscle (Adams, Turner, & Bucks, 2005). In this sense, a scale that would work for both males and females would have to include items concerned with bodybuilding and exercise.



Colleen Siti

I decided that the WCEBS should focus on the experience of disordered eating among women, and the extent to which a woman engages in weight-concerned behaviors. In a developmental psychopathology model, these behaviors and concerns may be risk factors for later eating disorders. I validated my scale on a sample of 40 college-aged, female undergraduate students at Moravian College. Scale validity was assessed by correlating the WCEBS total score with a body image satisfaction scale, a perfectionism scale, a forgiveness scale, and a depression scale.

After entering my doctoral program, I focused my Master's Thesis on altering the response format of the scale. This was done in an effort to reduce the ambiguity associated with the original response format, which was a 6-point Likert rating scale ranging from "I can relate to her a lot" to "I cannot relate to her at all." The response format was changed to range from "I am like her a lot" to "I am not like her at all." It was reduced from six response options to four to increase the clarity of the gradation between the options.

In a sample of 327 undergraduate females from three universities, the revised version of the WCEBS proved to have high internal consistency, yielding a coefficient alpha of .96 for the WCEBS total score. In validity analyses, the revised measure showed correlations in the expected directions with measures of self-esteem, attitudes toward eating, and body image.

For my doctoral project, I am currently in the process of validating the WCEBS on a clinical sample of women from an inpatient eating disorders facility. I plan to administer the WCEBS, along with the Eating Disorders Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 1994), the Eating Disorders Quality of Life scale (EDQOL; Engel, Adair, & Hayas, 2009), and the Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3; Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2003). In this manner, I will assess for convergent validity utilizing instruments that have been correlated with eating disorder symptomology.

Altogether I have been working on my assessment instrument for five years. In this time, I have gained an immense appreciation for the intricacies and nuances of test development. My work on the progressive iterations of my scale has enabled me to gain experience with more advanced statistic procedures that were not a focus of the PsyD statistics courses. I have gained knowledge and experience in factor analysis and nested sorting for the creation of parallel forms. I have learned the importance of item analysis for constructing reliable subscales. I have put my blood, sweat, and altogether too much neural activity into this scale. In short, I have emerged a changed and ultimately unique individual: a clinical psychology PsyD student who loves assessment and empirical research.

I recently flew my newly evolved self to Hawaii to present a sum-

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mary of my Master's Thesis findings at the 2013 American Psychological Association Conference. I was honored to be one of three students who received the "Association of Test Publishers Award for Outstanding Student Poster Focused on Assessment/WPS Emerging Leaders in Assessment Award." As I explained the focus of the PsyD program to the two other student awardees, I realized just how unique my position truly is. I am enthralled by both research and clinical work. I unequivocally love conducting individual and group therapy, and consider Carl Rogers to be an inspiring hero. However, I also love empirical research. I love the whole process, from the literature review, to the data collection, to data analysis. Perhaps most of all, I am intensely curious to discover whether, in the end, my research results validate or invalidate my initial hypothesis. The point is, research and clinical work are not incompatible or separate entities. There is a way to fall in love with both. As a new Student Editor of *The Score*, I can promise that I will remain enthusiastic about both sides of the psychological realm. I will be sure to voice this love continuously, as I move through the phases of a fourth-year in a PsyD program. These phases currently include wading through the various stages of the Association of Psychology Postdoctoral and Internship Centers (APPIC) "match" process (the process by which psychology graduate student applicants are placed into psychological internship positions). I will be detailing the experience of negotiating this process in my next article.

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Division 5 Membership Services

Join Division 5: Everyone may join via www.apa.org/divapp. New memberships are free with no journal included.

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Website: www.apa.org/divisions/div5

Listservs: See page 2.

Journals: You can see which journals you have paid for and access them online at www.apa.org via your myAPA profile. You will need to log in with your user ID or email and password. The journals are *Psychological Assessment*, *Psychological Methods*, and beginning in 2014, *Qualitative Psychology*.

Newsletter: The newsletter, *The Score*, is sent out on the announce listserv and is available on the division website.

Sections: The division has three sections—Assessment; Evaluation, Measurement, and Statistics; and Society for Qualitative Inquiry in Psychology. Members are contacted for their section choices after their membership in the division is recorded. Primary section choice determines who can vote for Section Representatives among Members, Fellows, and Voting Associates (5 years or more of membership). If you want to record or change a section choice, contact the division office (see below).

For help with membership issues, including changing address and email, contact division@apa.org or 202-336-6013.

WHAT'S NEW...

Introduction to Mediation, Moderation, and Conditional Process Analysis

By Andrew F. Hayes

Published in May 2013 by Guilford Press
(\$55.25 hardback, \$55.25 e-book)

Explaining the fundamentals of mediation and moderation analysis, this engaging book also shows how to integrate the two using an innovative strategy known as conditional process analysis. Procedures are described for testing hypotheses about the mechanisms by which causal effects operate, the conditions under which they occur, and the moderation of these mechanisms. Relying on the principles of ordinary least squares regression, Andrew Hayes carefully explains the estimation and interpretation of direct and indirect effects. He also illustrates probing and visualization of interactions, as well as testing of questions about moderated mediation. Examples using data from published studies illustrate how to conduct and report the analyses described in the book. Of special value, the book introduces and documents PROCESS, a macro for SPSS and SAS that does all the computations described in the book.

Longitudinal Structural Equation Modeling

By Todd D. Little

Published in April 2013 by Guilford Press
(\$59.50 hardback, \$59.50 e-book)

Featuring actual datasets as illustrative examples, this book reveals numerous ways to apply structural equation modeling (SEM) to any repeated-measures study. Initial chapters lay the groundwork for modeling a longitudinal change process, from measurement, design, and specification issues to model evaluation and interpretation. Covering both big-picture ideas and technical “how-to-do-it” details, the author deftly walks through when and how to use

longitudinal confirmatory factor analysis, longitudinal panel models (including the multiple-group case), multilevel models, growth curve models, and complex factor models, as well as models for mediation and moderation. User-friendly features include equation boxes that clearly explain the elements in every equation, end-of-chapter glossaries, and annotated suggestions for further reading.

Statistical Power Analysis for the Social and Behavioral Sciences: Basic and Advanced Techniques

By Xiaofeng Steven Liu

Published in November 2013 by Psychology Press/Routledge (\$44.95 paperback, \$165 hardback)

This is the first book to demonstrate the application of power analysis to the newer and more advanced statistical techniques that are increasingly used in the social and behavioral sciences. Both basic and advanced designs are covered. Readers are shown how to apply power analysis to techniques such as hierarchical linear modeling, meta-analysis, and structural equation modeling. Each chapter opens with a review of the statistical procedure and then proceeds to derive the power functions. This is followed by examples that demonstrate how to produce power tables and charts. The book clearly shows how to calculate power by providing open code for every design and procedure in R, SAS, and SPSS. Readers can verify the power computation using the computer programs on the book's website. There is a growing requirement to include power analysis to justify sample sizes in grant proposals. Most chapters are self-standing and can be read in any order without losing a sense of the book's basic principles.

Practical Tools for Designing and Weighting Survey Samples

By Richard Valliant, Jill A. Dever, & Frauke Kreuter

Published in 2013 by Springer (\$69.99 e-book, \$89.99 hardback)

This book puts an array of tools at the fingertips of practitioners by illustrating how existing software can be used to solve survey problems. The book addresses: (1) students seeking a more sophisticated understanding of applied sampling either through a second,

Have you published a new psychological test or testing product; a book on advanced statistics, measurement, or evaluation; an interesting website or other Internet group related to measurement, statistics, or evaluation; or a computer program useful to Division 5 membership? If so, we would like to include an announcement of about 100 words in this column. We would also appreciate any suggestions, or feedback, on how this section of the newsletter can better serve the Division 5 membership. Please take the opportunity to share information with colleagues through your contributions to this column.

Please send announcements and/or product literature to Associate Editor Michael Edwards: edwards.134@osu.edu

semester-long course or by way of a supplementary reference; (2) survey statisticians searching for practical guidance on how to apply concepts learned in theoretical or applied sampling courses; and (3) social scientists and other survey practitioners who desire insight into the statistical thinking and steps taken to design, select, and weight random survey samples. Several survey data sets are used to illustrate how to design samples, make estimates from complex surveys for use in optimizing the sample allocation, and calculate weights. Realistic survey projects are used to demonstrate the challenges and provide a context for the solutions. The book covers several topics that either are not included or are dealt with in a limited way in other texts. These areas include sample size computations for multistage designs, power calculations related to surveys, mathematical programming for sample allocation in a multi-criteria optimization setting, basic principles of area probability sampling, multiphase designs, quality control of survey operations, and statistical software for survey sampling and estimation.

Tony Puente Interview

(Continued from page 4)

for hours, and then call me into the room and grill me in front of a microphone and the Panel.

One time in particular, the Panel flew me to their meeting in Chicago to render an opinion on a very specific issue. I waited in the hallway, was called in before the Panel, and they asked me, "Do you think the word 'physician' should be excluded from all codes related to psychologists." I said "yes," they said "OK—no further questions," and I left the room and flew back to North Carolina. I had travelled halfway across the country to say one word. I wonder about the impact of that single "yes" whenever I read "qualified health professional" instead of "physician" in the CPT codes for psychology.

The CPT is an evolving process, and clearly psychology is not only well-respected but increasingly integrated into our healthcare system. I look forward to the day that psychologists have as much impact as our physician colleagues in understanding and resolving health care problems. And one particularly important way to do this is to emphasize the critical nature of testing, in objectively determining how behavioral and mental health factors play a role and can be modified in the disease process.

Advertise in *The Score*

The Score is the newsletter of the American Psychological Association's Division 5—Evaluation, Measurement, and Statistics. Division 5 is concerned with promoting high standards in both research and practical application of psychological assessment, evaluation, measurement, and statistics. Approximately half of the Division 5 members are university faculty members in quantitative psychology, psychometrics, educational psychology, or industrial-organizational psychology and half are engaged in careers in industry, including the areas of individual and large-scale assessment. More than 1,000 Division 5 members receive *The Score* each quarter.

Advertisements in *The Score* may be in the form of display advertisements or job announcements. Both types of ads can include graphics and other design features and can be submitted as text or camera-ready display art. Prices for advertisements and size requirements are provided in the accompanying table. Submission deadlines are 45 days prior to publication: February 15 for the April issue, May 15 for July, August 15 for October, and November 15 for January. To advertise in *The Score*, please contact Editor David Herzberg at dherzberg@wpspublish.com.

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