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EDITOR'S NOTE

Anita M. Hubley
 University of British Columbia
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Dear Friends,

This has been an exciting year for the ITC. The *Conference on Computer-Based Testing and the Internet*, held in England in June, brought a lot of attention to our organization and this has been evident not only by the increase in ITC memberships, but also in the interest shown in *Testing International (TI)*. More individuals are reading *TI* as evidenced by hits on its website and more people are submitting brief articles and reports.

This issue, one of our larger 16 page editions, contains some very interesting articles. In our first article, André De Champlain and colleagues describe an exciting collaboration between a consortium of medical schools in France and the National Board of Medical Examiners in the United States to assess medical students' knowledge of the clinical sciences. I'd like to encourage others involved in international work like this – whether it is testing research or policy work – to submit a short article to *TI*. Our second article, by John Raven is a provocative piece on research relating to Spearman's concepts of educative and reproductive abilities. Again, this paper provides an example of the type of thought-provoking essays I'd like to see more of in *TI*. Our last two articles stem directly from the ITC conference on *Computer-Based Testing and the Internet*. Fritz Drasgow and Jack Naglieri describe some of the initial work of the American Psychological Association's *Task Force on Internet Testing*. I hope we'll hear more about the Task Force's report as their work progresses. Michael Harris provides a highly informative paper in which he describes what is meant by the term "internet recruitment" and highlights not only the assumptions behind this recruitment approach, but also the role of testing and the questions that need to be addressed in future research.

In addition to our brief articles, there are also exciting reports about upcoming activities and announcements about two ITC Council members who will receive important awards in 2003.

Enjoy!

PRESIDENT'S LETTER

Bruce Bracken
 College of William and Mary
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Dear ITC Members:

As the year 2002 comes to an end, time has come to assess the progress of the ITC and give credit for the tremendous contributions made by the ITC Council, editors, and membership. Time is also at hand to share the Commission's plans for the upcoming year, and to present the direction the organization will take during the next two years.

Winchester, England. The ITC's principal project for 2002 was hosting the international conference, *Computer-Based Testing and the Internet: Building Guidelines for Best Practice*. Under the leadership of Dave Bartram and with the generous support of many sponsors, the ITC held a very successful conference in Winchester, England (June 12-15, 2002). The conference featured twelve keynote speakers, as well as workshops, symposia, papers, and posters addressing such important emerging topics as data protection and privacy, item and test generation, the interplay between e-learning and e-assessment, advances in computer-aided assessment, and psychometric issues in computer-based testing.

ITC Past-President Dave Bartram, and the SHL staff, ITC conference committee, participating Council members, and the city of Winchester worked collaboratively to produce yet another outstanding ITC conference. Individuals from more than 20 countries attended; conference sponsors included the Educational Testing Service, SHL Group, The British Psychological Society, the College Board, CAT*ASI, NCS Pearson, nferNelson, Riverside Publishing, Thomson Prometric incorporating Galton Technologies, The European Federation of Psychological Associations, The Psychological Corporation, and Psychological Assessment Resources. Congratulations to everyone involved!

Singapore. The ITC held its annual Council meeting and the biannual General Membership meeting in Singapore (July 7 - 12, 2002) in conjunction with the International Congress of Applied Psychology. Dave Bartram welcomed members and new Council members, and gave a state-of-the-organization address in which he recounted the accomplishments the ITC had made during his term in office as President. After the

gavel was passed to me, as incoming president, I addressed the directions the organization would take during the next two years and presented five goals for the organization.

These goals and specific plans for addressing them were discussed at the follow-up Council meeting on July 10. The proposed goals and corresponding initiatives follow:

Goal 1: To increase the visibility of the ITC and its products through increased public relations activities.

The Council approved a motion to establish Council working groups or committees to focus attention on the Commission's global mission. In addition to a Public Relations Working Group, which is intended to directly address the first goal, committees were also approved to promote ITC visibility through Membership, Conferences, and Scholarship. Each committee, chaired by an ITC officer, is charged with enhancing the ITC's membership, presence and its contributions.

The Scholarship Committee initiated several projects that are consistent with this first goal:

a) Council approved a motion by Chery Foxcroft and Marise Born to initiate a series of on-line readings in testing and assessment. The readings will consist of independent and integrated contributions focusing on specific testing topics, ideas, procedures, research and practice advances, and theory. The readings will be arranged by topical units, each with four to five readings nested within, and will be published on the ITC website (www.intestcom.org).

b) Dave Bartram and Iain Coyne are following up on the Winchester conference by drafting for Council approval a new set of ITC Guidelines on Computer/Internet Testing.

c) Iain Coyne has taken over management of the ITC website which includes updating and maintaining the current website and incorporating the new series of on-line readings.

d) The ITC newsletter, *Testing International*, provides the membership with on-going and up-to-date information on the organization's activities and involvement. *Testing International* will continue to be published under the careful editorship of Anita Hubley.

Goal 2: To increase ITC involvement and membership among national psychological organizations, publishers, and individuals worldwide, but especially in regions where the ITC has yet to develop a strong presence (e.g., Latin America, Asia, Africa).

Under the guidance of President-Elect José Muniz, the Membership Committee's challenge is to increase membership in every ITC membership category. During 2002, ITC membership increased in each membership category, welcoming three new Full Members, seven Affiliate Members, and 29 Individual Members.

To increase membership and share ITC expertise in regions where the organization has not been active, the Council agreed to explore the extent to which we can provide requested speaker support to conferences being hosted in Brazil and South Africa. We look forward to working with both organizations during 2003.

Goal 3: To hold a conference devoted to issues, procedures, policies, and applications related to fair and equitable testing for diverse populations.

Council approved a motion to host an ITC conference, *Equitable Assessment of Diverse Populations*, in Vancouver, British Columbia in mid-2004. Under the guidance of the Conference Committee, Anita Hubley as the Vancouver site coordinator, and program co-coordinator Bruce Bracken, a conference with broad appeal to applied psychologists is being planned. The Equitable Assessment conference will address profound issues of fair testing practices in educational, clinical, and business/industrial settings for both individual and group assessments. Best practices in assessment procedures, practices, policies, instruments, measurement methodology, test adaptation, and test development will be addressed.

Goal 4: To broaden the range of ITC influence by addressing applied testing issues, including individual school, child and adult clinical assessments.

The planned Equitable Assessment conference is intended to broaden the ITC focus and merge educational, clinical, and industrial assessment issues.

An ITC Council symposium on Individual Assessment was conducted at the Singapore ICAP

conference; Council members participating in the symposium included Cheryl Foxcroft, Jacques Gregoire, José Muniz, Tom Oakland, and Bruce Bracken (Chair).

Jacques Gregoire submitted a proposed ITC symposium on the topic of assessment of learning disabilities to the European Federation of Psychological Associations' conference to be held in Vienna, Austria (July, 2003).

Goal 5: To further develop the International Journal of Testing as a highly visible and well-respected professional journal.

Under the excellent editorship of Bruno Zumbo, the IJT published four issues during 2002 on timely and important topics related to testing and assessment. The IJT continues to seek outstanding manuscripts and encourages ITC members to submit their work to the Journal and to encourage their colleagues to do so as well. For information about the journal, contact Bruno Zumbo at (<http://www.educ.ubc.ca/faculty/zumbo/ijt/>). The ITC Council also is very pleased with the collaboration and support provided by the journal's publisher, Lawrence Erlbaum Associates.

Council. Each of the ITC Council members has been actively involved in the organization, providing many selfless hours of contribution during the year. Special appreciation is extended to the ITC officers, including Barbara Byrne, ITC Treasurer, for her tireless effort to manage the organization's financial books; Jacques Gregoire, ITC Secretary, for his careful recording and managing of the organization's minutes and arranging our meeting sites and functions; José Muniz, President-Elect, for the important role of recruiting and welcoming new members; and Dave Bartram, Past-President, for his guidance, experience, and support to Council.

I look forward to working closely with the ITC officers, Council, editors, publisher, and our membership during 2003. I also look forward to the ITC continuing to make significant contributions to the field of testing throughout the world.

Best wishes for a safe, healthy, and productive New Year to all.

BRIEF ARTICLES

Assessing French Medical Students' Knowledge of Clinical Sciences Using a Comprehensive Assessment: A Collaboration Between a Consortium of French Medical Schools and the National Board of Medical Examiners

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Introduction

In 2000, significant medical curricular reforms were instituted in France by a legislative commission mandated to complete this task. These reforms directly impacted upon the entering second year class of the *Deuxième Cycle des Études Médicales* (DCEM 2) in October, 2001.

The French medical curriculum begins after high school and is divided into three phases. Phase I (*Premier Cycle des Études Médicales* or *PCEM*), is devoted to the study of basic sciences required for the study of medicine. At the end of the first year, intramural examinations are administered to select the small proportion (about 10%) of students that will be allowed to continue onward to Phase II (*Deuxième Cycle des Études Médicales* or *DCEM*). The latter Phase partly targets the study of basic biomedical sciences (*DCEM 1*) but is primarily focused toward the clinical sciences and clinical training (years 2-4, i.e., *DCEM 2-DCEM 4*). Phase III (*Internat*), currently optional, lasts three to five years and is devoted to supervised training. In order to be admitted to Phase III for specialty training, students must successfully pass a comprehensive clinical written examination.

In summary, recent reforms entail transitioning from a discipline-based pedagogical approach to an integrative model that favors active and cross-disciplinary learning. Additionally, the new curriculum will emphasize a better integration of theory and practice, small group, and self-learning. A final goal of these curricular reforms is to enhance the medical student's ability to critically analyze and synthesize data, and to foster the development of requisite skills for the third phase of professional training, which is to become mandatory.

At present, French students wishing to gain entry into specialty residency programs must successfully pass the *Internat* examination during the DCEM 4. This examination is composed of a relatively small number of multiple-choice items and essay questions. Given the format, the present curriculum tends to be poorly covered by this examination. Consequently, a more general examination of clinical sciences is needed. The French government has affirmed that a national residency selection examination program be implemented by 2004. At this point, a one to three-hour written examination, relying exclusively on essay items, is being proposed as the sole residency admission criterion. Given the well-documented psychometric shortcomings of constructed-response items in general, it seems inadvisable to rely solely on this assessment modality as a selection tool for entry into French residency programs (Brennan, & Johnson, 1995; Shavelson, Baxter, & Gao, 1993; Swanson, Norman, & Linn, 1993). Unacceptable score reliability estimates have been repeatedly reported in the literature with constructed-response items due largely to the well-known phenomenon of content specificity (Linn & Burton, 1994). Consequently, an unacceptably large number of constructed-response items (more than is usually practically feasible) need to be administered to obtain suitable reliability estimates for selection purposes in a high-stakes context.

France-National Board of Medical Examiners Collaboration: A Summary of Phase I Activities and Results

As part of its efforts to develop a high quality residency selection examination program, an agency of the French Ministry of Health invited the leadership of the National Board of Medical Examiners (NBME) to present an overview of the development of national examination programs in

the United States at a special conference convened in the fall of 2000. Following a series of discussions between institutions, it was agreed that a consortium of French medical schools and the NBME would develop a pilot multiple-choice national assessment aimed at measuring knowledge and application of clinical sciences using the NBME's expertise and test materials. The pilot examination, referred to as the *Évaluation Standardisée du Second Cycle (ESSC)* (i.e., Standardized Evaluation of the Second Cycle), was administered to a sample of French medical students at four test sites in January, 2002.

Participants: Two hundred and eighty-five DCEM 4 level students completed the ESSC in January, 2002 at the following four French medical schools: Nice, Nancy, Paris-Créteil and Paris Saint-Antoine. Sample sizes ranged from 43 (Paris-Créteil) to 112 (Nancy) with Nice and Paris-Saint Antoine fielding 70 and 60 examinees, respectively. Additionally, the group was composed of 117 male examinees (41.1%) and 109 female examinees (38.2%). Fifty-nine (20.7%) examinees did not provide this information. Ages ranged from 21 to 36 with a mean of 25.2 years of age and a standard deviation of 1.73. The DCEM 4 level is comparable to the fourth-year of a typical American medical school curriculum. Participation was compulsory for Nancy, Nice, and Paris St-Antoine students while it was voluntary (though strongly encouraged) for candidates from Paris-Créteil.

Examination: The four-hour examination, administered under secure, proctored and standardized conditions identical to those that were in place with prior paper-and-pencil United States Medical Licensing Examinations (USMLE), was composed of 200 multiple-choice items. All items required a single best answer on the part of the examinee with the number of options ranging from four to 10. The examination was an adaptation of an existing NBME examination and targeted a number of content and skill domains pertaining to the clinical sciences.

Summary Findings: Phase I: It was apparent, over the course of the test development meetings that were held between French faculty members and NBME staff, that the process of developing a suitable French clinical sciences examination could be accomplished with relatively little effort. Although some items needed to be adapted to reflect local medical practices and guidelines, it was interesting to note that less than 10% of

initially selected items were rejected due to their inappropriateness to French medical practice. Results from a Rasch item difficulty-proficiency plot also clearly showed that the examination was, by and large, well targeted to the proficiency levels of French students. Consequently, the scores reported to schools are probably accurate estimates of students' clinical sciences proficiency level. This is further supported by the high reliability coefficient (0.91) estimated for the person by item response matrix.

Additionally, results suggest that French students performed only slightly below the mean of a group of U.S. medical students taking a similar examination and with similar stakes and motivational level (differences between French and American examinees were on the order of less than .5 SD). These findings were encouraging given that French students had little, if any, exposure to the clinical vignette item format that is central to the original English version of the examination. French multiple-choice items are typically fact-based (list a drug, treatment, etc.) whereas those included in NBME examinations present a clinical scenario to the student in order to elicit some expected response (e.g., diagnosis, treatment modality). That is, NBME item formats tend to target higher cognitive processing skills on the part of the student (Bloom, 1956). Finally, surveys completed by French students after the examination show that the reactions toward this type of test were favorable overall.

Proposed Phase II Pilot Examination

Limitation of Phase I Study: Although encouraging, the findings reported in this investigation need to be interpreted cautiously in light of the small number of French schools that took part in the study. Only four out of the more than 40 medical schools currently in existence in France were represented in this field trial. Also, the number of examinees that participated in this study (N = 285) was small. Finally, the degree of heterogeneity with respect to motivational level makes it difficult to accurately gauge the usefulness of this type of examination and the external validity of findings to the French medical school population at large.

Purpose of Phase II Study: The purpose of the Phase II project will be to extend the work undertaken in the initial investigation while addressing some of the shortcomings encountered.

As was the case in Phase I, a 200-item Comprehensive Clinical Sciences examination will be developed by a committee of French physicians supported by NBME staff for administration to a sample of French medical students in January, 2003. The items selected for translation and inclusion into this second test form will again be taken from an NBME pool.

Participants: Unlike the initial project, it is anticipated that 8-12 French medical schools will participate in the Phase II administration with up to 1,000 examinees being tested. This should provide for a much more representative sample of performances than was the case in Phase I testing. Also, schools will be selected to ensure that they constitute a representative sample of all French medical schools with regard to geography and any other pertinent characteristics.

Examination: A set of NBME items will be selected for translation by a committee of French physicians using the same procedure that was used in Phase I and that has been applied with some Medical Council of Canada examinations (Bordage, Carretier, Bertrand, & Page, 1995). However, unlike the previous project, only about 125 new test items will be chosen. The remaining 75 items in the examination will be selected from the Phase I form. Adopting this linked schema (i.e., including an anchor of 75 items previously administered to French students) will allow us to scale and equate scores to last year's form to determine the degree to which performances in 2002 and 2003 are comparable, and to compare the psychometric characteristics of items common to both forms.

Outcome: The globalization of medicine has had important repercussions on various aspects of the profession. The sharing of educational resources and curricula is gradually favoring the development of similar practices across countries, which may, in turn, lead to common standards (Prideaux & Gordon, 2002). One of the consequences of adopting similar curricula and practices is that common assessments of medical knowledge and skills will need to be developed and adopted by various countries throughout the world. It is hoped that the results of the proposed project will provide useful information to determine whether the multiple-choice examination developed jointly by a French committee of academic physicians and NBME staff can offer a rational, viable and better

alternative for the *Internat* examination than the proposed essay-based assessment.

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Spearman's Raven Legacy

John Raven
SCOTLAND

Spearman's discovery of *g* is well known. Less well known is that Spearman saw *g itself* as being made up of two psychologically very different abilities which nevertheless worked closely together. These he termed *eductive* and *reproductive* abilities. The first term comes from the Latin root *educere* and thus refers to "the ability to draw meaning out of confusion". The second refers to the ability to recall acquired information. Research over the intervening century has strongly confirmed Spearman's observations (Carroll 1993, Horn, 1994) if not the fluid-crystallized terminology introduced by Cattell and Horn. As Horn (1994) now also recognises, one is *not* a crystallised form of the other. The abilities are distinct at birth, have different genetic origins, are influenced by different aspects of the environment, and predict different things in life.

But Spearman also observed that *g* itself had emerged from analyses of the correlations between the tests employed in a so-called "educational" system which does not merit the name because it does not "draw out" the diverse talents of those involved. He also noted that indexing those talents meant developing an alternative psychometric model. He made the point as follows: "Every normal man, woman and child is a genius at something ... the problem is to identify at what ... this must be a most difficult task because it occurs in only a minute proportion of circumstances ... this cannot be done with any of the procedures in current use ...".

The purpose of this article is to summarise some of the research that my father and I have conducted in both the narrower and wider of these areas in such a way that readers whose appetite is whetted by what is said can find their way to relevant recent publications.

Ageing and Cognitive Ability

My father was one of a number of psychologists who thought that they had, through cross-sectional studies, conclusively demonstrated that eductive, but not reproductive, ability declined steadily from about 22 years of age onward.

The interpretation of these well established data was dramatically called into question by Flynn (1984, 1987). We have added three things to Flynn's conclusion. Whereas Flynn brought together *Raven Progressive Matrices (RPM)* data from 18 year olds in several countries, we¹ compiled cross-age, cross-sectional, data from samples of the British population tested around 1942 and 1992. What these data show is that the eductive ability of the 1922 birth cohort – who were 20 when tested in 1942 and 70 when tested in 1992 – has *not* declined as they aged. Instead, what one sees is a continuous, and dramatic², increase in the scores of people of all levels of ability with date of birth. The data that most psychologists had previously interpreted as showing that reasoning ability declines with age thus reveal something much more interesting: The ability to make meaning out of confusion has been improving dramatically over the last century and that increase has been environmentally induced.

Other data we have assembled show that the features of the environment that are responsible are

not those on which psychologists and sociologists have focussed most attention. Data collected by researchers working in many different countries support the conclusion that the norms are, at any point in time, similar across most cultures with a tradition of literacy. Since these cultures vary enormously in their state of economic development, their family sizes, their access to television, education, and computers and so on, this cross-cultural stability invalidates virtually all the explanations put forward by psychologists to explain the increase over time³.

But, in fact, recently published data from another area clearly show that much of the controversy Flynn provoked should never have occurred. Over the century for which normative data for the RPM exist, life expectancy has increased equally steadily and dramatically. For example, the life expectancy at birth of British males has increased from 45 to 75 years.

It is salutary to ponder the implications of these data. Flynn suggests that backward projection of the RPM data to the time of the Greeks indicate that the Greeks must have been incredibly stupid. He then uses this argument, along with others, to arrive at the conclusion that data on the differences between cultural groups have little meaning, asserting that “the tests cannot save themselves”. But does the life expectancy data not equally suggest that the Greeks must have had remarkably short lives? And does it follow that the differences between the life expectancy of blacks, whites, men, and women are meaningless? And do the data suggest that one should look for a single factor explanation of the increase – equivalent to changes in education, family size, and the availability of social puzzles? Above all, do the data suggest that whatever environmental variables are responsible for the increase over time are also responsible for the intra-generational and inter-group variance?

Implications

But, I hear you asking, what has this to do with developments in testing? Well, these studies, and the work summarised by Carroll (1993), *might* have had enormous implications for the conceptual framework that lies behind measures of cognitive ability. In practice, they do not. But the changes over time have created a serious ceiling effect on the *Standard Progressive Matrices (SPM)* among adolescents and young adults ... although better discrimination among the less able. It has therefore

been necessary to develop a new test – the *Standard Progressive Matrices Plus* (Raven, J. C., Styles, I., & Raven, M. A., 1998) – to restore the discriminative power at the upper end of ability that the SPM had when it was first developed.

Talent Diversity

We may turn now to our work in the other areas noted by Spearman that were mentioned earlier. As Spearman hinted, the main barrier to moving forward inheres in the measurement model espoused by psychologists (which was actually wished upon them by so-called educators who did not merit the name⁴). The difficulty posed by the model can perhaps be made clearest by asking “Where would biologists have got to if they had tried to describe all the variance between animals or plants in terms of 1, 2, or even 16 ‘variables’, then tried to describe the variance between the environments inhabited by those organisms in terms of nine variables, and then sought to assess the effects of the environments on the animals by intercorrelating the ‘animal’ and ‘environmental’ variables?”

The effects of psychologists’ failure to develop an appropriate measurement paradigm are serious and may be illustrated from a brief example. Psychologists are often asked to evaluate and compare the effectiveness of educational programmes. In particular, they have been asked to evaluate “progressive education”⁵. Many of those who have advocated or provided “progressive” education have not done so on the grounds that it improved reading, writing, and arithmetical skills but rather on the grounds that it created opportunities for pupils to develop characteristics like self-confidence, creativity, and initiative. More importantly, it presented an opportunity to nurture a diversity of talents and thus create cultures of enterprise or initiative, that is to say, to nurture emergent group properties.

Since there are no good measures of these qualities – and especially of the diversity of talents nurtured – and because the Joint Committee on Standards for the Evaluation of Educational Programmes and Policies (1981) insists that evaluators should only use tests of proven reliability and validity – evaluators have typically gone about their business using only tests purporting⁶ to measure reading, writing, and counting. It then emerges that “progressive education” does not enhance such scores. (Stallings and Kaskowitz [1974] even

found that it *depressed* them whilst at the same time *increased* Progressive Matrices scores.) These findings have then been used to justify closure of such programmes. Note that this has occurred despite two vitally important observations that can be made about some of the programmes. First, since they are the *only* educational programmes which draw out the talents of the pupils, they are the only ones that merit description as “education”. Second, these are the *only* educational programmes which set out to nurture the qualities that are required to transform our society in such a way that our species, and the planet as we know it, will have any chance of survival.

Implications

Because of these limitations, most of the evaluations can only be described as both scientifically incompetent and unethical⁷. Interestingly, however, further reflection reveals that the quality of an assessment, whether of an individual or of an educational or social process, is to be judged from its *comprehensiveness*, not from the accuracy of the assessment of one or two of its components.

The nature of the paradigm shift required to develop measures of the qualities mentioned can be illustrated using another example. Spearman drew attention to the specificity problem. Because they are difficult and demanding activities, people will only display the initiative, creativity, and self-confidence of which they are capable while carrying out activities that they are strongly motivated to carry out. The activities they are strongly motivated to carry out are specific and legion, varying from a predisposition to put drunks at ease, to raiding banks, to creating political turbulence. So, if one wants to make any meaningful assessment of someone’s ability to be creative, take initiative, or display a high degree of internal locus of control, one must first discover what it is that they are strongly motivated to do. Then one must set about identifying the components of competence they bring to bear to carry out such activities effectively. That is to say, as Spearman noted, the question is: “In the course of undertaking what kind of activity do they display their creativity, initiative, self-confidence, etc.?” not “*How* creative is this person?”

The process is analogous to a chemical analysis or the classification of a biological specimen and its

effective implementation therefore depends on the development of a framework akin to Dalton’s atomic theory or Linnaeus’s classification of animals and plants.

External Determinants of Behaviour

There is not space here to outline where we have got to in our quest to develop such a framework and set of analytic (or “assessment”) procedures. Interested readers will have to turn to our *Competence in the Learning Society* (Raven & Stephenson, 2001). Nor, indeed, is there space to even hint at the work we have done on the nature and assessment of developmental environments as they express themselves in homes, schools, and workplaces. But I cannot close without mentioning that, in the end, it has been this study of the ecological context of behaviour that has produced by far the most radical change in our thinking. This is because it has emerged that human behaviour is not mainly determined by personal talents, abilities, attitudes, and values but by an invisible network of external social forces which constrain the individual.

The point may again be made via an analogy. Prior to Newton, if things moved or changed direction it was because they were possessed of “animal spirits”. After Newton, it was because they were acted upon by a network of often invisible forces, documentation of which enabled one not only to predict the existence of previously unknown planets but also to harness those invisible forces to do useful work for mankind – such as by adding keels to sailing boats to harness the invisible counter-reaction of the sea to the wind to enable the sailing boats to head into the wind.

Implications

If we are to understand and predict behaviour – and thus gain control over our destinies – it is essential to map and harness an analogous network of social forces.

Our task as psychometricians is, therefore, to, on the one hand, build on the tools we have developed to implement a *descriptive* framework for thinking about the variance in human abilities and environments (and their interactions) and, on the other, to develop the tools required to map the network of social forces which overwhelmingly determine behaviour⁸.

Notes

- 1 See the 1998 edition of the General section of the Manual for Raven's Progressive Matrices and Vocabulary Scales (Raven, Raven, & Court, 1998).
- 2 Fifty percent of our grandparents would be assigned to Special Education classes in the U.S. if their scores were compared with today's norms.
- 3 See Neisser (1998) for a review of the status of the explanations put forward.
- 4 Actually, the roots of this problem are very deep indeed. To expose them, it is necessary to engage in the kind of socio-cybernetic analysis advocated later in this article. Interested readers should turn to Raven (2002).
- 5 See Raven (1994) for a review of these studies.
- 6 In Raven (1991) and elsewhere, I show that these tests actually lack construct validity.
- 7 See Raven (1997, 2000) for fuller discussion.
- 8 Whereas much of our work in connection with the former has been summarised in Raven & Stephenson (2001), our work on socio-cybernetics currently is only available in an unpublished paper by Raven & Navrotsky (2000).

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**American Psychological Association's
Task Force on Internet Testing**

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In late 2001, the American Psychological Association (APA) constituted a task force to consider issues related to Internet testing. The charge of the task force was to examine current Internet testing practices and consider psychometric, ethical, legal, and practical implications of this mode of testing.

The task force is sponsored by APA's Board of Scientific Affairs and Board of Professional Affairs. The task force is co-chaired by Jack Naglieri, George Mason University, and Fritz Drasgow, University of Illinois at Urbana-

Champaign. The seven members of the task force were selected to provide expertise in a wide range of areas of testing, including educational, industrial/organizational, vocational, personality, school, forensic, neuropsychological, and clinical. Members were also selected from a variety of types of organizations, including universities, large publishers, and small Internet testing companies.

The task force had its first meeting on December 8-9, 2001 in Washington, DC. A second meeting was held in March 2002, also in Washington, DC.

The task force was *not* formed to develop standards or guidelines for Internet testing. The *Standards for Educational and Psychological Testing* provides detailed guidance for test development and use. Moreover, other professional groups have developed standards and guidelines explicitly for computerized testing - for example, the Association of Test Publishers' *Guidelines for Computer-Based Testing* and the British Standards Institution's *A Code of Practice for the Use of Information Technology for the Delivery of Assessments*.

Instead, the task force is preparing a report for its sponsoring boards that summarizes current Internet testing activities, reviews important issues, and makes suggestions for future directions. After review by the sponsoring boards, the report may be disseminated via publication in an academic journal.

At present, the report has the following major sections:

- Background, including a review of the growth of Internet testing and a discussion of its benefits;
- New Problems, Old Issues, which notes that although the specific challenges of Internet testing are new, reliability, validity, and test integrity remain central concerns;
- Host/Server Hardware Considerations, which discusses these important, but often arcane, issues;
- Special Issues, including testing people with disabling conditions and testing people of diverse cultural backgrounds;
- Types of Internet Testing, including educational, vocational, intellectual, neuropsychological, and industrial/organizational;

- Illustrations, which provide examples of outstanding and problematic Internet testing;
- Ethical Issues, which considers a variety of issues from APA's *Ethical Standards of Psychologists*; and
- Recommendations for the Future, including research needs and appropriate practice.

The task force plans on completing an initial version of the report to be submitted to its sponsoring boards during Fall 2002.

Matchmaker, Matchmaker, Make Me A Match: Internet Recruitment in the Workplace

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I believe that one area that has been most affected by the Internet is recruitment, or from the applicant's perspective, the job hunting process. As a result of the Internet, never before have so many people been able to review so many job openings so quickly. Yet, only just a few years ago, most Industrial/Organizational (I/O) psychologists considered the recruitment function a relatively insignificant part of the hiring process. Indeed, practice by experts other than psychologists has largely driven innovations in the recruitment process and some have speculated that as a result, I/O psychologists may be largely left out of the entire hiring process, as recruitment (and as a consequence, testing) goes largely "online."

The purpose of this paper is to briefly outline what Internet recruitment is, what some basic assumptions of internet recruitment are, and address some research and practice issues involving this technique. I will touch on the role of Internet testing in this process, but refer the reader to an article in *Testing International* by David Bartram in June, 2002, for further thoughts. I begin first with a description of Internet recruitment.

What is Internet Recruitment?

The term "Internet recruitment" is actually somewhat of a misnomer, in that there are several different approaches to this technique. There are five basic approaches as follows. The *job board*

method is among the most popular approaches. In one section of a typical job board one will find resumes, posted by applicants, which can be searched by a recruiter. In a second section of a job board one will find job openings, which can be searched by job seekers. The advantage is that each section can be examined using a search engine, which facilitates the location of appropriate jobs/applicants. The second approach is a *company website* where a company can list job openings (which can be searched), as well as a mechanism for submitting resumes on-line. My current favorite is www.goarmy.com, which provides music, chat capabilities, and a free computer game, as well as information about jobs in the military. The third approach is what I term *e-recruitment*, wherein a live recruiter uses the Internet to participate in chatrooms and electronic bulletin boards, and may use various search techniques to locate potential candidates. The fourth approach, known as *relationship recruitment*, attempts to develop a database of potential candidates while maintaining a long-term relationship via email with these candidates (see www.futurestep.com for a good example). Finally, *surreptitious approaches* comprise another technique. This technique uses indirect methods that target candidates who may not even be looking for a job. The best example is www.salary.com, which enables candidates to obtain salary information for different jobs in different geographic locations. Alongside this information, openings for jobs will appear. Pop-job ads may be the next technique that emerges under this category.

Assumptions of Internet Recruitment

First, Internet recruitment assumes that organizations must compete for qualified candidates and that the recruitment site can affect the attractiveness of the organization and applicants' willingness to apply for a job. This assumption implies that all aspects of the hiring process may affect organizational attractiveness, including the testing process and various communications received by the candidates. Second, Internet recruitment has increasingly assumed that recruitment is merely one phase of a larger process. Often referred to as Talent Relationship Management (TRM) or Human Capital Management (HCM), current thinking is that recruitment is one phase in a larger process. For example, after an applicant applies for a job opening, he or she may take an on-line test battery.

Once hired, the applicant might go through a second test battery to determine areas in need of training. A Web-based training program might be recommended and a test taken to assess mastery of the material.

Role of Employment Testing in Internet Recruitment

For a variety of reasons beyond the scope of this article, Internet recruitment has garnered much more attention than Internet testing in the business world. Thus, Internet testing has had to find a role for itself within the confines of Internet recruitment, rather than the other way around. Nonetheless, the economies of scale have forced Internet recruitment sites to pay much more attention to Internet testing. Specifically, as the number of applicants has risen, Internet recruitment sites have been forced to consider how to reduce the sheer number of applicants to a sizable figure. Testing has been one approach to screening the number of candidates to a more reasonable number. At the same time, Internet testing has led to some interesting challenges. First, there has been a strong emphasis on speed in the Internet recruitment process, particularly given the possibility of a system crash or slow processing. Second, in a non-proctored situation, questions may arise as to the true identity of the test taker. Third, security issues may arise. Nonetheless, Internet testing will continue to rise in popularity, as a complement to Internet recruitment.

Questions Concerning Internet Recruitment

There are a number of questions of potentially great practical interest to I/O psychologists. First, from a legal perspective, there are some interesting questions that remain unanswered. Some have suggested that given differences in Internet access by different demographic groups (e.g., minorities), Internet recruitment may create a disparate impact against protected groups. This is an empirical question, which has just recently begun to be explored; to date, the evidence is inconclusive, but I am currently working with two very large databases to get some answers. Second, the Equal Employment Opportunity Commission of the United States is grappling with a definition of what constitutes a candidate in the Internet recruitment context; depending on the answer, this could have a great effect on disparate impact analysis. Third, the role of "job testers" or individuals who apply for a job for the sole purpose of ferreting out

discrimination might apply repeatedly for a job over the Internet to test the system for possible disparate impact. Unlike a face to face situation, it might be much easier for such procedures to be conducted over the Internet and for organizations to face lawsuits as a result.

Second, I/O psychologists might examine the nature of Internet applicants in terms of qualifications, motivation, and other characteristics of interest compared with applicants from other sources (e.g., newspaper ads). There is a long history of this kind of research and it has long intrigued researchers.

Third, I/O psychologists should examine the effect of Internet recruitment on job applicants. For example, do certain approaches (e.g., pop-up ads) create greater resentment compared to other approaches (e.g., relationship recruitment)? Moreover, what aspects of websites affect job applicants?

Conclusions

As indicated by the title of this article, one way to think about Internet recruitment is that it, in many ways, is like a matchmaking service. Use of new metaphors has become quite common in this area, and in the process, has generated new ways of approaching the question of matching applicants to jobs. Although it is difficult to predict the future, I am quite certain that Internet recruitment is here to stay and that it will affect the role of the I/O psychologist in important ways. I urge my colleagues to stay abreast of developments in this area or you may not be invited to the wedding. I would be happy to share a copy of a paper addressing many of these issues. Please mail me at mharris@umsl.edu, with IRIOP chapter in the subject title, for a copy.

International Journal of Testing (IJT)

Official Journal of the ITC

Editor: Bruno D. Zumbo

Publisher: Lawrence Erlbaum Assoc.

<http://www.educ.ubc.ca/faculty/zumbo/ijt/>

REPORTS

ITC On-line Readings in Testing and Assessment Project

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Free University
THE NETHERLANDS

For some time now, the ITC Council has been contemplating how it can make a meaningful contribution to the teaching of psychometrics, testing, and assessment. At a meeting of the ITC Council in Singapore in July, the Council decided to initiate an On-line Readings in Testing and Assessment Project. This project is seen as one way of contributing to a world-wide call to produce psychometricians and assessment practitioners who are more appropriately prepared for modern day testing and assessment. The project will be modeled along the lines of a project of the Center for Cross-Cultural Research at Western Washington University, U.S. entitled On Line Readings in Psychology and Culture (W.J. Lonner, D.L. Dinnel, S.A. Hayes, & D.N. Sattler, Eds.) (visit <http://www.wvu.edu/~culture>). The two on-line projects could well complement each other, which will ultimately be to the benefit of scholars and researchers around the world and especially in developing countries.

At this early stage in the ITC project, it is envisaged that On-line Readings in Testing and Assessment (hereafter this working title is abbreviated to ORTA) will consist of a large number of independent and integrated readings (short chapters of 10 to 12 pages in length). Each reading will focus on a specific topic, advance in testing, summary of research findings, or theoretical perspective that will be of interest to students and researchers in the field of testing and assessment in a variety of disciplines (psychology, education, statistics, industrial and organisational psychology, human resources management, etc.). It is envisaged that the readings could be used mainly to supplement basic psychometric, testing, and assessment texts.

The readings will be arranged according to topical units. While an initial framework for the units to be included in ORTA has been developed, the framework is dynamic and can be adjusted, expanded and refined as contributions are received and in response to new developments in the field. Furthermore, the menu of available readings will be gradually built up. This implies that all the readings will not have to be ready by the time that ORTA's first readings appear on the ITC website in July 2003. Currently, it is envisaged that the following units will be included in ORTA:

1. Historical perspectives
2. Basic concepts and statistics
3. Advanced statistics
4. Test theory
5. Test development and adaptation
6. Characteristics of tests
7. Computer-based and Internet tests and test delivery
8. Test administration and scoring
9. Feedback and reporting
10. Psychological testing and assessment
11. Forensic and psycholegal assessment
12. Educational testing and assessment
13. Credentialing examinations
14. Occupational testing and assessment
15. Geriatric assessment/ Assessment of aging
16. Neuropsychological assessment
17. Health-related assessment
18. Environmental assessment
19. Using tests to evaluate programmes and to inform policy-making
20. Using tests in cross-cultural and multicultural settings
21. Testing individuals with special needs
22. Special considerations when testing children
23. Social, ethical, and fairness considerations in testing
24. Fair practices in testing and test use
25. Rights and responsibilities of test-takers
26. Good practices for test developers
27. Reviewing tests
28. Preparing psychometricians
29. Preparing assessment practitioners in applied settings
30. Future perspectives

The readings will be uploaded onto the ITC's web site and will be free and instantly available to anyone who logs onto the home page. Instructors could put together packages of readings for their students, or students may be told how to access the home page and which readings to download. Researchers, educators and students in third world countries should find these readings particularly useful as it is often difficult to gain access to journal articles and American or European text books in developing countries due to poor

economic climates that result in such scholarly materials being largely unaffordable.

We are currently on the look out for potential contributors. While we will send out invitations to potential contributors, based on their expertise and research in the field of psychometrics, testing, and assessment, we would like anyone who reads this article and feels that he/she would like to potentially contribute a reading, to contact us (see contact details below). It would be helpful if you could indicate the area(s) of psychometrics, testing, and assessment where your expertise lies and if you could attach a CV. Should we then invite you to prepare a reading on a specified topic, we will provide you with information and guidelines regarding how to prepare the reading and what the time frame for preparing the manuscript is.

An essential feature of this project is that all contributors and those from the ITC Council who serve as editors will work without remuneration. The contributions should be seen as providing a pedagogical and educational service to scholars and students around the world to understand the basics of and advances in measurement, evaluation, psychometrics, test development, testing, and assessment. Authors will sign an agreement for their manuscript to be included in the project and for their work to be free and instantly available to anyone who is interested for educational purposes.

The ITC is excited about this new project. We hope that you will join hands with us by volunteering to contribute and/or by making use of the on-line readings (in due course) in your research, teaching and professional preparation of the next generation of psychometricians and assessment practitioners.

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Report on Testing Activities in Argentina

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ARGENTINA

National Association

The Asociación Argentina de Estudio e Investigación en Psicodiagnóstico (ADEIP) is a scientific association of psychodiagnosticians from Argentina and other countries. ADEIP is a member of International Rorschach Society and the International Test Commission.

ADEIP (<http://www.adeip.org/>) was founded in 1988; its main objectives are:

1. To encourage the use of different assessment techniques,
2. Stimulate and support research, and
3. Sponsor periodic scientific events.

At present, ADEIP offers its members an information journal every four months, an annual psychodiagnostic congress, a specialized library, seminars, courses, conferences and workshops in its nineteen delegations, internal tasks in the Foundations "Jiménez Díaz" (Madrid), an annual magazine called "Psicodiagnosticar", a computerized program service for Rorschach, virtual display information, discussion of papers through a virtual forum, and agreements with private and public universities.

VI Psychodiagnostic National Congress

The VI Psychodiagnostic National Congress was held from October 3-5, 2002 in Córdoba, Argentina. The theme was "Efficiency and Ethics in Psychodiagnosics: The social-cultural reality". There were more than 500 attendees from Argentina, Brazil, and Uruguay.

VII Psychodiagnostic National Congress

The VII Psychodiagnostic National Congress will be held in Mendoza, Argentina from October 9-11, 2003. The theme will be "Psychodiagnosics: Issues and contexts". Participants are expected from Argentina, Chile, Brazil and Uruguay. The congress will include symposia, conversation hours, workshops, individual presentations and posters.

THE NOTICEBOARD

Ronald Hambleton To Receive ATP Career Achievement Award in Computer-Based Testing

We are pleased to announce that ITC Council member and former ITC President Prof. Ronald Hambleton is being recognized by the Association of Test Publishers (ATP) with a Career Achievement Award in Computer-Based Testing. He will receive his award at the ATP's Fourth Annual Conference "Technology in Testing: Application and Innovation" in February, 2003. Prof. Hambleton is Distinguished University Professor, Chair of the Research and Evaluation Methods Program, and co-Director of the Center for Educational Assessment at the University of Massachusetts in the U.S.A. He is being recognized for his influential research on computer-based test designs, performance standards setting on credentialing exams, translation of credentialing exams for uses in multiple languages and cultures, applications of item response theory, and test score reporting. Notably, Prof. Hambleton has authored several well-known classic texts including *Fundamentals of Item Response Theory* and *Item Response Theory: Principles and Applications*. He is a Past-President of the National Council on Measurement in Education (NCME), Division 5 of the American Psychological Association (APA), and Division 2 of the International Association of Applied Psychology (IAAP). Congratulations!

Tom Oakland To Receive APA Award for Distinguished Contributions to the International Advancement of Psychology

We are also pleased to announce that another ITC Council member and former ITC President, Prof. Tom Oakland (University of Florida, U.S.A.), has been selected by the American Psychological Association (APA) Committee for International Affairs in Psychology to receive their 2003 Award for Distinguished Contributions to the International Advancement of Psychology. His major areas of scholarly interest include psychoeducational assessment and intervention, international school psychology and testing issues, and children's

temperament. He is a Past-President of the International School Psychology Association (ISPA) and APA's Division of School Psychology. In 2000, Prof. Oakland received Distinguished Service and Senior Scientist Awards, respectively, from these organizations. Congratulations!

**UPCOMING CONFERENCES ON
TESTING & ASSESSMENT**

Technology in Testing: Application and Innovation

February 24-26, 2003

Amelia Island, Florida, United States

Website:

<http://www.testpublishers.org/Con2003/index.html>

This conference, hosted by the Association of Test Publishers (ATP), will focus on the following themes: program management, integration of learning and testing, test development, alternative testing technologies, and international applications of computer-based testing.

Consortium for School Networking's (CoSN) 8th Annual K-12 School Networking Conference: Achievement, Assessment & Accountability

February 25-27, 2003 (with International Research Symposium on Feb. 28)

Arlington, Virginia, United States

Website: <http://www.k12schoolnetworking.org/>

Contact name: Michelle Shirley

Contact e-mail: michelle@cosn.org

In the wake of *No Child Left Behind*, there is greater emphasis on ensuring that classroom interventions impact achievement and that the decisions of school leaders are data driven.

7th Annual CSU Fullerton Assessment & 2nd GE Embedded Assessment Conferences

March 12-14, 2003

Fullerton, California, United States

Website: <http://faculty.fullerton.edu/AssessmentConf/>

Contact name: JoAnn Carter-Wells

Contact e-mail: jcarterwells@fullerton.edu

"Assessment: The Compass for Guiding Learning through Currents of Change" is the theme for the year 2003 Assessment Conference sponsored by the Cal State Fullerton College of Business and Economics. Rapid changes are taking place in higher education as a result of technology development, changing constituent

demographics, and reordering of state and federal government budgeting priorities. This conference seeks to bring experts together to explore the ways that outcome assessment might be used to help institutions of higher learning steer a course through these troubled waters.

American Association for Higher Education (AAHE) Assessment Conference

June 22-24, 2003

Preconference Workshops: June 21 & 22, 2003
Seattle, WA, United States

Website: <http://www.aahe.org/assessment/2003/>

The conference will explore the theme "A Richer and More Coherent Set of Assessment Practices". Specifically, the focus will be on exploring relationships among teaching, learning, and the design of assessment methods.

VII Psychodiagnostic National Congress

October 9-11, 2003

Mendoza, Argentina

Website: www.adeip.org

Contact e-mail: adeip@arnet.com.ar

Contact tel/fax: (0341) 4240013

The theme this year will be "Psychodiagnosis: Issues and contexts".

**Submission deadline for the June 2003
issue of *Testing International* is
May 1, 2003.**

**Please submit all articles and reports
(preferably as IBM PC-compatible Word
or WordPerfect files) to:**

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