November 1, 2003

Dear Editor,

I want to comment on Tony O’Driscoll’s ambitious, but risky, undertaking in the July issue of Performance Improvement – that is, to chronicle the emergence of Human Performance Technology. The effort is ambitious in trying to provide an accurate synthesis of a very complex and diverse field of endeavor in a few pages. It is risky because so much of the critical history of the field of HPT is buried deep in the relatively unpublished activities of the 1960’s. Dale Brethower has suggested (and I agree) that most all of the “discovery” that is the foundation of what has become HPT was done in the period 1958-69. And from 1970 to the present, the rest of the world has been learning and applying the important notions developed in the ‘60’s, as they were slowly made public through various publications, presentations and workshops. These two distinct phases in the history of HPT - first, discovery of the basic principles of HPT by the original thinkers/innovators and second, the “discovery” of the power and application of the principles by the rest of the world – emphasize that the “history” of an idea/invention does not begin with its public acceptance. Thus the writer/researcher of a history of HPT has to either have “been there” in the 1960’s (or talked extensively with individuals who were) or try to “connect the dots” or piece together a paper trail history from the various publications that began to eek out after 1967. The O’Driscoll piece is an example of the latter. Given the lack of a good paper trail of the critical work in the 60’s, Tony has put together a decent approximation of the emergence of HPT. But because his article is likely to become a popular reference on the history of HPT, I feel a need to correct some specific assertions made in, and some general impressions left by, the article. To do this, I want to first present some history of relevant events in the 1960’s and then comment on some specific points in the article.

A look at HPT Development in the 1960’s

The following is not intended to be a history of the field of HPT. It is just my personal history in the field as it relates to O’Driscoll’s article. Susan Markle, Don Tosti, Roger Kaufman, and many more (1) have similar histories to relate. (Bob Mager has just published his “history” in Life in the Pinball Machine – Careening from There to Here.)

1960 – Dale Brethower (a former Skinner graduate student and a former ISPI President) arrived at the University of Michigan, where I was a recent MBA working in the Office of Research Administration.

1961 – Both Dale and I joined the staff of the Institute for Behavioral Research and Programmed Instruction, Inc., founded by Professor F. Rand Morton, recently of Harvard and a leader in the field of Audio-Lingual Programming. That enterprise was located in Ann Arbor, Michigan and lasted just one year.

(1) For example, witness this recent note I received from ISPI President-elect Don Tosti. “I probably know as much or more of the history than anyone. I enlisted in the Educational Revolution on August, 1960 as a bugle boy in General Homme’s (Dr. Lloyd) army. I helped get both TMI (Teaching Machines, Inc.) and GPTC (General Programmed Teaching Corporation) started. He and I did the pilot program that led to the creation of the Job Corps. Not only did I write a bunch of programs that got sold door to door, but Lloyd and I started the first tutorial center that sold learning gain rather than time. We invented contingency contracting and covevant control. And that was just in the first four years (one year before Harless had even surfaced).” In a separate communiqué, Don reminded me that Lloyd Homme published a paper called “What Behavioral Engineering Is” in The Psychological Record in 1968.
1962 – Professor George Odiorne and I founded the University of Michigan’s Center for Programmed Learning for Business, in the Graduate School of Business. Dale Brethower joined the faculty of our week-long Programmed Learning Workshop, which ran every month until 1969, when we all left the Center and pursued careers elsewhere. (The workshop subsequently morphed into a workshop on ISD and continued to run until the 1990’s.) Other Programmed Learning Workshop faculty were David Markle (one-time husband of Susan Markle) and Donald E. P. Smith, co-author of English 2600, one of the first widely published programmed instruction texts. Guest presenters over the years included Robert Horn (founder of Information Mapping), Roger Kaufman and Joe Harless.

1963 – Starting in 1962, Dale and I were among those “astute researchers (who) began to recognize that learning does not always result in improved performance.” (From O’Driscoll, page 12.) According to O’Driscoll, we “stumbled across a significant insight…” As a result of this “stumbling”, in 1963 we added the Applied Learning Theory workshop to the Center’s curriculum. This workshop was based somewhat on Skinner’s theories of learning and advanced the notion that there were other factors impacting job performance beside Knowledge/Skills, such as feedback, resources, and consequences. Over time, and under the direction of Dale, this workshop morphed into the Management of Behavior Change Workshop, which was the first workshop ever on this topic. Like all our workshops at the Center, the audience was managers and staff specialists (e.g., training, HR) from business and industry. Out of this work came the notion that Behavior Change (to improve performance) had two components – The ACQUISITION of Behavior and the MAINTENANCE of Behavior. The former was addressed through the infusion of knowledge and development of skill and the latter by feedback, consequences, etc. In April, 1963 I published my first article, “Programmed Learning: The Whole Picture”, in ASTD’s Training Director’s Journal.

1964 – I developed the Human Performance System model (O’Driscoll, Figure 4, p. 16), with the help of Dale Brethower and Professor George Geis. Note that O’Driscoll places the HPS in a 1992 time frame. Some of this inaccuracy is understandable, since the model was not formally published until 1972. However, it was widely used in Center workshops for years. Also in 1964, I had the opportunity to go to Washington D.C. for a block of time and become a foot-soldier in LBJ’s (President Lyndon Johnson) War on Poverty. There I had the opportunity to meet Don Tosti and Charlie Slack and work with Stuart Margulies, Donn Mosenfelder, Harvey Block, Bert Holtby and many others.

1965 – Dale Brethower and I added another workshop to the Center’s curriculum; The Training Systems Workshop. The workshop title was a little misleading, as it taught performance analysis and pulled together all our thinking on performance and systems. Some noteworthy achievements of this workshop:

- The foundation of the workshop was the General Systems Model and we developed the notion of the Organization as a System. This was Dale’s research and thinking, which eventually became his Total Performance System framework and my Anatomy of Performance framework. We also had important “systems thinking” input from Gus Rath, Irving Goldberg and Len Silvern.
- Dale and I developed the Three Level framework (Organization, Process and Job/Performer) which was the inspiration for Gilbert’s “Levels of Vantage Point” in Human Competence and 25 years later became the major framework for Rummler and Brache’s Improving Performance.
- The focus was measurable results, not behavior.
- During the first session of the workshop, we divided the participants into four teams and they each visited a major Detroit-based business and prepared what subsequently has become known as “organization maps”. (Long before Panza.)
- We introduced the notion of Performance Engineering and argued for a Performance Department to replace the training department. (Long before the Robinsons.) Subsequently (around 1968), an alumnus of the Center’s workshops, Ed Feeney, became the Vice President of Performance at Emery Air Freight – the first ever, I believe. (Ed Feeney’s work at Emery became legendary in the early 70’s and he was in a
management film with Fred Skinner, showing the application of behavioral principles to business.)

Also that year,

- A number of us from the Center presented at the NSPI Conference in Philadelphia, our first conference.
- The staff of the Programmed Learning Workshop published Programmed Learning: A Practicum, which was the primary text we had used for the workshop since 1963. Brethower was the lead author.

1966 - The American Management Association published an article by Dale and myself, titled (not our choice) “For Improved Work Performance: Accentuate the Positive”, which advanced the notion of the power of “positive reinforcement” as a management practice. The working title for the article, which was first drafted in 1963 and used in Center workshops for years, was “Reinforcement Theory; A Management Tool”.

1967 – A lot of things happened:

- The Center for Programmed Learning for Business received the NSPI award for Outstanding Public Organization.
- Karen Searles Brethower published the chapter “Maintenance Systems; The Neglected Half of Behavior Change” in the book Managing the Instructional Programming Effort, published by the University of Michigan and edited by me, along with Joe Yaney and Al Schrader.
- Tom Gilbert began to work with us as a guest speaker in the Training Systems Workshop. During this period he published an article called “Praxeonomy: A Systematic Approach to Identifying Training Needs”, through the University of Michigan.
- Our Center for Programmed Learning for Business group organized the first-ever “Business and Industry” Track at the NSPI Conference in Boston, featuring a number of alumni of our Programmed Learning Workshops describing the significant impact “instructional technology” was having on their organizations. Up to that point, the presentations at the NSPI Conference were predominantly from academia, the military, the fields of medicine and education and consultants.
- Dale Brethower and I (along with others) completed a comprehensive performance analysis for a major auto industry supplier. Training was not one of the recommended changes.

1968 – I became national president of NSPI. The executive staff consisted of a half-time secretary at Trinity University. We held most of the Board meetings in airport Admiral Clubs because I had a membership and we could meet for free. The 1969 conference in Washington, D.C, had a record 1200 attendees. The late Glenn Valentine was the program chair and the conference was organized and staffed by members of the Potomac Chapter.

1969 – A big transition year. I moved to the East Coast to form Praxis Corporation with Tom Gilbert and Irving Goldberg. We did some very exciting things over the ten years that Praxis existed. Among other things, we built a sound performance analysis methodology around the theories generated at Michigan with Dale Brethower.

1970 – Again, many things happened:

- Mager published his first edition of Analyzing Performance Problems. It was a shocker. We felt we had been scooped, since it was what Dale and I had been teaching at Michigan for years and what Tom had been teaching at TOR (a company he formed in the early 60’s, where Joe Harless was an associate) and elsewhere for years. I remember there were only three references in the back of the first edition of the book – one was Karen Brethower’s chapter “Maintenance Systems; The Neglected Half of Behavior Change” (conceived in 1963 and published in 1967) and the other was Harless’ “Ounce of Analysis”. (I have noticed that there were no such references in subsequent editions of the book. Hmmm!)
- In an effort to counter the impact of Mager’s book Analyzing Performance Problems, we (Praxis) formalized and launched the Performance Audit methodology and the Performance Analysis Workshop, based on that methodology. This methodology had a strong “worth” component, reflecting Gilbert’s expertise, but was based heavily on the
methodology developed at Michigan, since Gilbert’s emphasis had been the Job Level and knowledge/skill up to that point. The Performance Analysis Workshop was successfully offered until the 1979 sale of Praxis to Kepner-Tregoe. It was also licensed by the Bell System (and a number of other organizations), who trained hundreds of their training analysts.

1971 – We completed a significant performance analysis/performance audit for a major automobile company. To this day, it is still a model of what performance analysis/performance consulting should be. I also met Butch Lineberry for the first time, as he and Joe Harless involved us in some work with one of their clients.

1972 – Gilbert began working on what eventually became Human Competence and I published an article on the Human Performance System in Human Resources Management entitled “Human Performance Problems and Their Solutions”. Along the way, we also delivered our Performance Analysis Workshop for the Agway Company. Our client was Jim Robinson, who 23 years later co-authored the best selling book, Performance Consulting.

1973 – I developed a supervisor/manager workshop called Managing the Performance System, built around troubleshooting the Human Performance System. It was subsequently licensed by the Bell System, who trained hundreds of managers. This and Mager’s Analyzing Performance Problems workshop were some of the first successful efforts to train line managers to use HPT. (Early, successful efforts to “zap the gap”, if you will.) When Praxis was sold in 1979, this workshop became part of the Kepner-Tregoe offerings. As of the 2003 ASTD Conference and Exposition, the course is still one of their offerings - 35 years and counting. As, of course, is Mager’s APP workshop.

1974 – I published another article on the Human Performance System in a government publication, The Bureaucrat, entitled “Troubleshooting Performance Problems”. This was probably the first time the Human Performance System was published outside its use in workshops since 1964. (Note the ten year publication gap.)

1975 – As mentioned by O’Driscoll (page 14), Harless was interviewed by Training magazine and he began to “brand” Front-end Analysis, presumably as a counter to Mager’s Analyzing Performance Problems and Praxis’ Performance Audit. During the 1972-1978 period, The Harless Performance Guild and Praxis were in intense competition for workshop and consulting business in the Bell System and various government agencies. It was “Performance Audit” versus “Front-End Analysis”, Gilbert versus Harless, with myself and Butch Lineberry cast as “seconds” in the frequent duals.

1976-77 – The core Praxis staff of 15 continued (since 1970, actually) to do brilliant, ground breaking analysis and design (both instructional and performance system) work, much of it subsequently described in Human Competence.

1978 – Gilbert finally published Human Competence. When Tom started that endeavor in 1972, it was to be a recap of his ideas up to that point in time. However, it eventually evolved to largely be a description of Praxis’ thinking and doing during the period 1972-77. Although I had brought the Human Performance System model from Michigan and it was an integral part of two of Praxis’ workshops, Gilbert never embraced it. (For all the things Tom was, he was not a “systems thinker” - he never quite “got” the notion of the performer in the mix.) He played with the components of the HPS (the components that impact human performance) and finally came-up with the Behavior Engineering Model (BEM) as his “take” on the same issue. My personal opinion (bolstered by the current emphasis on HPT being about having a “systems view”) is that the HPS does a better job reflecting that underlying systems assumption than the BEM matrix. But that’s history.

1979 - Praxis was sold and Gilbert and I went in separate directions.

1982 – I formed The Rummler Group, where son Rick and Carol Panza joined me for several years. During these years (1982-86), I launched a workshop titled Organization Mapping.

1984 – I began teaching the Three Levels (Organization, Process, Job/Performer) view of performance on the executive programs of Motorola and GTE. This was six years prior to the publication of Improving Performance.

1987 – I formed the Rummler-Brache Group with Alan Brache.

1990 – Improving Performance (Rummler and Brache) was published.
Correcting Some Impressions
My preferred approach to capturing the history of HPT would be to ask the people who were there – who made the history. For whatever reason, Tony was not able to access the “living history” and has attempted to build a history of HPT based on an extensive literature search of post-1970 publications. However, there are significant disconnects between who did what, when in the 1960’s and the impression one can get from trying to “connect the dots” between publications (and publication dates) post 1969. Following are several such impressions left by Tony’s article that I would like to correct.

1. Page 10, last paragraph, continuing to the next page. As part of the description of the significance of Human Competence, O’Driscoll writes: “…Gilbert’s seminal work (i.e., Human Competence) …was instrumental in forging new research directions, which would ultimately lead to the development of HPT.” Not so #1; the book didn’t “ultimately lead” to the development of HPT. As I hope my personal history points out, HPT was well developed by 1978, starting with the work of Gilbert, Brethower, Rummler and others in the early 1960’s. Not so #2; “…forging new research directions”. It just didn’t work like that. For a discussion of “research”, see # 6, below.

2. Page 14. Two things:
   a. "In this interview (1975), Harless foreshadowed performance analysis, a process that would emerge (?) in earnest following the release of … Human Competence." (in 1978). Not really. Performance analysis had been taught in the Training Systems Workshop at Michigan since 1965 and in the Performance Analysis Workshop (note the name) at Praxis from 1970 to the time of the Harless interview. If anything, performance analysis was on the scene before Harless coined the term front-end analysis.
   b. “In the following passage, Gilbert draws on Harless’ notion of front-end analysis and expands on it:” Never would happen. As I mentioned above, Gilbert (and Rummler and Brethower) was talking about and doing performance analysis (see “Praxeonomy: A Systematic Approach to Identifying Training Needs”, published in 1967) long before front-end analysis became a “thing”. In addition (and I think Joe will agree with me on this), Tom didn’t “draw” on anybody. The fact is that Harless was a protégé of Gilbert’s and worked with Tom for several years in the early 60’s.

3. Page 15. “Drawing on the work of Katz and Kahn (1966) and other systems theorists, Rummler and Breache (1992) came to understand that the organization is an adaptive system…..” I can see how O’Driscoll might have made this connection from looking at the literature. Let me clarify this for anyone who cares. First, the Katz and Kahn book was about social systems and I did not find it helpful when thinking about organizations as adaptive systems. Second, I intuitively came to understand organizations as adaptive systems in 1955, as a fledgling industrial engineer in an automobile assembly plant. Third, the formal “organizations as adaptive systems” framework evolved through discussions with Dale Brethower in 1965 (before Katz & Kahn) as we designed the Training Systems Workshop at Michigan. My theoretical understanding came from Dale, his application of General Systems Theory, and his Total Performance System work.

4. Page 16. “Rummler and Brache developed the HPS model to characterize the new (?) view of individual performance within an organizational context” ( with a 1992 reference). I want to emphasize what I said in my historical summary above, that this “new” view was actually developed in 1963-64 and was central to the 1965 Training System Workshop. And it predates Mager’s Analyzing Performance Problems model (1970) and Gilbert’s BEM (1978). In all fairness to O’Driscoll, the references to the HPS were limited prior to 1988, unless you attended one of the many workshop built around the notion.

performance technologists with a conceptual framework within which to focus their analysis, the need (sic) for a more tactical, analytic approach toward root-cause analysis quickly surfaced." A couple of things:

a. **First, the implied sequence is incorrect.** The statement implies that Rummler & Brache first came up with a macro conceptual framework that subsequently required the development of a more micro root-cause diagnostic model. The truth is just the opposite -- the micro HPS model for diagnosing the root-cause of human performance problems existed since 1963-64. The conceptual framework (the Three Levels), encompassing the HPS and linking it to organization results came shortly afterward, in 1965, and was the foundation of the Training Systems Workshop and subsequently, of the book *Improving Performance*. (But again, not written about extensively until 1990.)

b. **I am more than a little disappointed at this.** I would hope that O'Driscoll and others would notice that all three of the Cause Analysis models he describes (and the HPS, which he chose not to describe as a Cause Analysis model) are essentially the same thing. With the possible exception of one variable in each model and different labels for the other variables, they are the same. This makes sense, since they all come from the same origin -- Skinner. This discussion of these three models as something different and each author as contributing something unique and different only serves to confuse. (And make academic mountains out of practical mole-hills.) I defy O'Driscoll to show me something in the Harless, Mager and Gilbert models that isn't captured in the Human Performance System (and vice-versa). Think "branding". (2)

6. Page 11. "Thanks to Gilbert’s work and the ensuing NSPI research – the field of instructional technology was born." **First, Instructional Technology and HPT existed 15 years before *Human Competence* was published.** Second, I want to correct the impression that conscious decisions were ever made concerning the evolution of ISD and HPT -- and that there was some great research "funder" in the sky who was steering the development of the field through the strategic funding of research in instructional design and HPT. People have to understand the intense competition for "share of mind" and "share of market" between all the practitioners during the 1960’s and 70’s. There was funding for work with the military and various private sector organizations, but it was almost always tied to specific deliverables. It was brutal -- you have no idea the number of companies that started and failed during those years. Most every private sector operation was living on the economic edge. The cycle was innovate, try to sell it (or frequently the reverse), try it out, learn what worked and would sell, and innovate again. (And "brand" the product or technique, if possible.) In my experience, there was no "research" -- it was try to develop something that would deliver the desired performance.

(2) Beware the phenomenon of personal "branding". As I attempted to point out in my history of the field, there was intense competition (mostly amicable) for "share of mind" and market that existed between individual thinker/doers (and their organizations) during the 60's and 70's. That competitive environment led to what we know today as "branding": the building and marketing of distinctions that differentiate your product/service from the competition. We didn’t call it branding, but we all knew intuitively that you had to distinguish what you were presenting from what the other guys were presenting. This demand to build your "brand" during the early rough and tumble days of the field presents a special challenge to those now reading and writing histories of ISD/HPT. (Of course, anybody attending a current-day ISPI Conference will note that the practice of branding is alive and well.) Ideally, would-be HPT historians are able to distinguish between those elements/events/models/publications in our history that were real value-add, breakthrough contributions to the field and those that were merely clever, opportunistic twists on the original to establish a brand (or pump-out a thesis).
and that someone would pay for. (Incidentally, among Gilbert and the Michigan Center and a few other pioneers, there was little distinction from 1963 on, whether the solution involved “instruction” or “performance support”.) There was no orderly emergence of HPT from ISD in 1988 or at any time, as implied several places in the O’Driscoll article. The “good guys” were doing both ISD and HPT jointly from the mid-60’s on. We eventually made enough noise that NSPI changed its name to include “performance” to reflect the reality that a number (small) of us were successfully doing this work. The practitioners drove the change in the field through their individual work. NSPI as an entity had nothing to do with it. There was no such thing as “ensuing NSPI research”. It was the thinker/doers figuring out what worked and what the market would pay for. A few people may have gotten some grant money for research, but the real “funders” of the movement were institutions like CDC, the Bell System, the Forest Service, the old U.S. Civil Service Commission and the US Military.

7. Page 14 – “Could the person [perform] if his or her life depends on it?” If the answer to this question is no, then Mager contends that a training solution might be appropriate ....” (The reference is to a 1988 Mager publication.) Just for the record, that “If their life depended on it” question also appears in my analysis guide on page 70 of Karen Brethower’s “Maintenance: the Neglected Half of Behavior Change” chapter, published in 1967 and on page 24 of Gilbert’s Praxeonomy article, published the same year. I will freely admit that I probably got the question from Tom, since it was one of his favorites.

And one final, general observation about the O’Driscoll article. Tony has relied heavily on secondary sources (e.g., Rosenberg, Gordon and Goad) for his information on what happened in the 1960’s and 70’s, rather than primary sources, including picking-up the phone and calling any number of us. Now there is the potential for O’Driscoll’s article to become the next frequently quoted, “authoritative” secondary source of information on the history of HPT. It is this likelihood that has prompted me to write this letter and try to interject some primary source reality into O’Driscoll’s speculation on who did what, when.

In Summary
I applaud Tony O’Driscoll for attempting to make sense of HPT history from the limited literature on the field. Trying to sort out “who” did “what”, “when”, regarding the early years of HPT is like trying to map the interaction between the great French Impressionists in their early days or unravel the history of jazz in America. But the impression his account leaves that there was an orderly evolution of ideas (i.e. from ISD to HPT), guided by research, really is a fantasy. The “educational revolution” of the 1960’s was an over-determined event. It was triggered by the combination of a growing need for a better trained workforce and better educated society, new theories of learning, new techniques for delivering instruction, and hundreds of bright and energetic individuals committed to a “better way”. The resulting activity in 1960-65 was akin to a chemical chain reaction, with efforts and applications taking place simultaneously at Harvard, Columbia, Pittsburg, Michigan, Bell Labs, Xerox, IBM and in the military, to name but a few. There was no sequence of “first ISD and then HPT”. Out of the same basic set of principles developed in the 60’s, some folks pursued the instructional design path and others the performance path, and some both. And the paths intersected a number of times as we sought to earn a living and deliver results. There was no grand plan, no orderly, funded research in the 60’s and 70’s. And NSPI never set direction for the “field” or made anything happen (appropriately so, as far as I am concerned) – NSPI was basically the club where we all could get together, drink, tell lies and occasionally learn from each other. From my experience, the evolution of ISD/HPT is more a tribute to the American entrepreneurial spirit than to any grand research strategy or sound research methodology. And having “been there”, as a card-carrying member of the “educational revolution” since 1961 and a foot-soldier in the War on Poverty in 1964-65, I strongly dispute the conclusion there were but three noteworthy HPT pioneers. As for a/the “father” of HPT, I think we are still waiting for the DNA results.
Moving Forward
As I mentioned, there are two basic approaches to capturing the early history of HPT; talking with the folks who were there or trying to build a paper trail. O’Driscoll gave the latter approach a good shot. However, I think it is time we formally tried the former approach and to that end I am initiating an ISPI sanctioned two-year project to record an accurate history of the ISD/HPT movement, as told by those who made it happen, starting with a special session at the 2004 ISPI Conference. My hope is that this exercise will culminate in an “official” ISPI sponsored history of the field and nobody will EVER have to speculate again on what really happened in the field from 1958 to 1980.

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