

Report of the Research Department

Johnson O'Connor Research Foundation
Human Engineering Laboratory
Johnson O'Connor Research Support Corporation

2019

Goals of the Research Department

1. Isolating aptitudes and studying their role in various occupations.
2. Developing accurate measures of aptitudes.
3. Investigating the role of aptitudes in education.
4. Evaluating age and sex differences and the effect of practice on test performance.
5. Studying the processes involved in the acquisition of knowledge.
6. Developing accurate measures of knowledge.
7. Communicating research findings to the public.

jocrf.org

From the President

I am writing this in April of 2020, when the state of the world and the future feel very uncertain.

Looking back at 2019, it was also a year of change. At the end of the year we said goodbye to our Research Director, Rusty Burke. We are grateful for all the work that he did over his many years at the Foundation, and his breadth of knowledge and expertise will be greatly missed. We wish him the best of luck in his retirement!

Tragically, one of our researchers, Linda Houser-Marko, passed away in January 2020. She was a wonderful researcher and a wonderful human being, and she is a great loss to our organization. Our longtime research manager, Dave Schroeder, is now working part-time. We plan to hire another researcher this year, but the process is on hold for now due to the pandemic. We will restart the hiring process as soon as it is safe and practical to do so.

We are very excited about the work of the new Research Committee, chaired by Holly Wilhelm, which will serve as a liaison to strengthen communication between our research and testing arms, and to foster participation in research by our testing staff.

In general, the research that we do can be roughly categorized into two types: work that is more inward-focused, toward refining our own tests and helping our clients, and work that is more outward-focused, often building on the efforts of others in the wider psychological research community. Our research, every year, includes a little bit of both.

Some of the research we did last year that was more inward-focused included occupational plots that our researchers put together. They used occupational data from our client base (those who said they were satisfied with their work) to analyze how people in various occupations tend to score on our aptitude tests. These can serve as a valuable supplement to the occupational validation studies we have done in the past and continue to pursue. We also continue to collect data for our longitudinal studies about how clients are using their aptitude test results.

Outward-focused research looks to the wider psychological and intelligence research community. This year, Dave Schroeder focused on the negative Flynn effect, a phenomenon we have noticed in our client data that is consistent with findings of other researchers on intelligence. Ashley Brown also looked at the relationship our aptitudes may have with some of the measures on the Big Five personality scale.

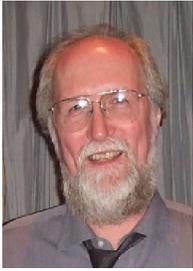
Of course, these are complementary concepts, since research that is of interest to our clients can also be of interest to the wider world and the general public, and outward-focused research, especially the relationships our tests have with other measures of personality and intelligence, can add to our understanding of our tests, and the aptitudes they measure.



Anne Steiner

The Johnson O'Connor Research Foundation is a unique organization. We're proud of the work our test administrators and summarizers, backed by our research team, do every day to help our clients, and we're also proud to participate in the broader community of researchers devoted to the study of human ability and human potential.

Research Staff 2019



Russell E. Burke, Research Director, joined the Foundation in 1983 in New Orleans, and served as Director in Houston before moving to Washington, D.C., where he has served as both a summarizer and Director before taking on his current role guiding the Foundation's research efforts.

David H. Schroeder, Research Manager, joined the Research Department in August 1984. He has a B.S. from the University of Illinois and an M.S. from Colorado State University, as well as an M.A. and a Ph.D. in personality psychology from The Johns Hopkins University.



Linda S. Houser-Marko, Senior Researcher, joined the Research Department in October 2010. She has a B.A. from Gustavus Adolphus College in Minnesota and a Ph.D. in social and personality psychology from the University of Missouri. She has published research on the self, identity, and motivation.

Ashley D. Brown, Researcher, joined the Research Department in September 2018. She earned her B.S. in psychology from the University of Kentucky and her Ph.D. in personality and health psychology from Northwestern University. She has published research on psychometric methods and individual differences.



Holly Wilhelm joined the Foundation staff as a test administrator in the Atlanta office in 2005, and has since contributed to multiple writing and research endeavors. She has particularly enjoyed delving into data with item analysis projects on individual tests. She became the chair of the Research Committee in 2019.

Alison V. S. White, Research Assistant, first joined the Foundation in 2011 and worked in the Atlanta and Chicago labs as a test administrator before transitioning to her current role in the Research Department. Alison holds a degree in psychology from Georgia State University.



Rusty Burke

Rusty Burke, our Director of Research, retired from his long career at the Foundation at the end of 2019.

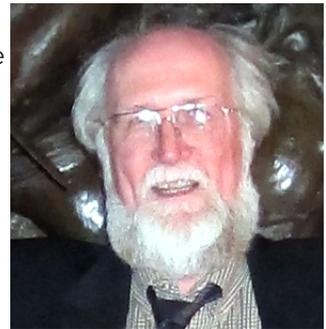
He was hired as a test administrator in 1983 in New Orleans, transferred to Houston to become a lab director, and then moved to Washington, DC. His many years of experience gave him a strong practical knowledge base regarding the administration and interpretation of our tests for clients, even as he delved into the research side of the Foundation. He read just about every piece of writing ever produced by the Foundation, from Johnson O'Connor's writings to test manuals to statistical bulletins. He completed a technical report on a validation study of software engineers; contributed to many other research projects; and served on research committees. In 2009, he became our Director of Research.

As Director, he spearheaded exciting new collaborations with members of the wider psychology research community, thereby enhancing our understanding of the aptitudes we measure. He gave our Ph.D. researchers the flexibility to explore their own areas of passion and interest. Through it all, he served as a bridge between testing staff and the research department, and he liked nothing more than to help new test administrators more fully comprehend the research underlying our understanding of the tests. He was always ready with a vivid anecdote illustrating complicated subjects in a way that was easy to understand.

On a personal level, I will greatly miss talking with him over his favorite whiskey, discussing baseball, music, history, literature, and, of course, aptitudes.

He will retain a connection to our research department through his role as the chair of the Board of Trustees Research Advisory Committee. We wish him a long and happy retirement!

—Anne Steiner



Linda Houser-Marko



Tragically, one of our valued researchers, Linda Houser-Marko, passed away in January 2020.

Linda joined the Research Department in the fall of 2010 after completing her doctorate in Social Psychology at the University of Missouri and a post-doctoral fellowship at the University of Illinois, Chicago. Her contributions to our work over the past dozen years have been significant, including many validation studies regarding person-job fit, aptitudes and STEM fields, creativity, and much more.

To my mind, perhaps her most important, and I hope long-lasting, contribution was in suggesting and carrying out the long-term follow-up studies of past examinees, starting with a ten-year follow-up and now expanded to include one-year and five-year surveys. These have given us the chance to see how aptitudes play out over long periods of time, something we have long wished for but for which we did not have the tools until the internet and SurveyMonkey, and Linda's recognition of their potential, made it possible.

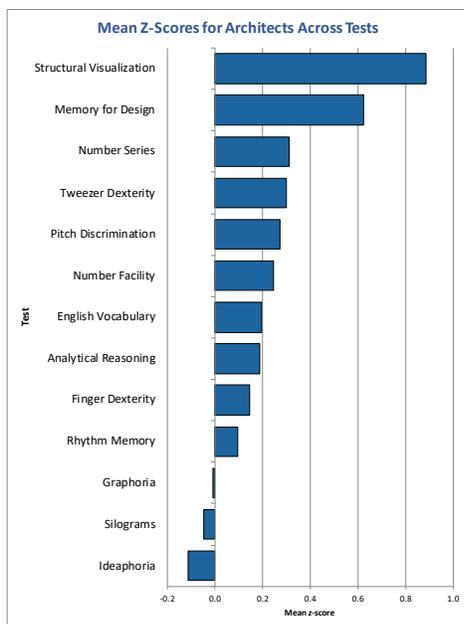
Those who worked closely with Linda know what a joy it was. It was particularly gratifying to me, as her supervisor, to see how she grew in confidence with the years, more and more taking the initiative to originate her own projects and offering her insights into how to improve our efforts. She truly enjoyed her opportunities to work with testing staff on their projects, as well

She will be greatly missed by all.

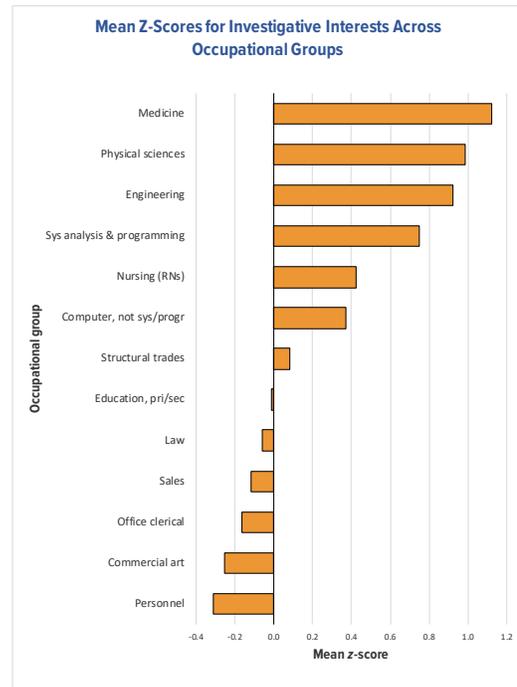
—Rusty Burke

Occupational Plots

In 2018 David Schroeder, Research Manager, and Ashley Brown, Researcher, began to work on a series of studies in which they used the Foundation’s database to analyze how examinees from various occupations score on the Foundation’s battery of tests. In Technical Report 2019-1, Schroeder and Brown presented the results for 74 occupations, and as an example, the group means for architects are shown in the accompanying figure. As can be seen, architects score especially high on Structural Visualization and Memory for Design and show modest elevations on Number Series and Tweezer Dexterity. In Statistical Bulletin 2019-1, Schroeder and Brown presented the results for each test in the Foundation’s battery. For example, for Ideaphoria, editors and writers tend to score relatively high, while engineers tend to score below the middle of the distribution.



Later in 2019, Schroeder and Brown performed similar analyses for various occupations on the six scales of the Self-Directed Search, the vocational-interest test that the Foundation gives. In a second figure here, the means are shown for a number of occupations on the SDS Investigative scale, with physicians, physical



scientists, and engineers scoring relatively high and commercial artists and office-clerical and personnel workers tending to score low.

Schroeder and Brown also conducted a study in which they compared occupational means on Foundation tests for examinees who were satisfied with their occupations (who were used exclusively for the studies described up to this point) with means for examinees who were dissatisfied with their occupations. The study indicated that in the majority of instances, the means for dissatisfied examinees were similar to the means for satisfied examinees. However, there were some interesting differences between the groups, including some instances in which it appears that the dissatisfied examinees may have included persons who had high scores for aptitudes that may not be used very much in the given occupation.

Finally, Schroeder and Brown published Statistical Bulletins in which they reported analyses specifically directed toward artistic occupations and the Foundation’s Grip test.

Test Scores Across Time

For several years, Schroeder has been investigating trends across time on scores for the Foundation’s tests. From the 1990s to the mid-2000s, scores rose on a number of the Foundation’s tests, with the accompanying figure showing the pattern for the general factor for the Foundation’s test battery (see Figure 1 below). This finding is consistent with the pattern for scores on major IQ tests, as reported by outside researcher James Flynn and others. Our research, however, indicated that gains in composite scores, such as IQ and general-factor scores, appear to be largely due to gains in particular areas. As Figure 2 shows, in terms of factors, gains in our battery were mainly in the areas of spatial and to some extent reasoning tests. In terms of individual aptitudes, the highest gains were observed for Memory for Design and especially Foresight.

After the mid-2000s, the pattern of gains in particular areas largely flattened out, and in later years we have observed declining scores, as shown in the figures. In addition, when we looked at scores for 2016 to 2018, they continued the declines observed for the preceding years. Also, whereas the earlier gains varied widely across aptitudes, the declines appear to be fairly general—that is,

all of the factors in our battery are showing substantial declines. Some investigators have suggested that the contemporary attention to mobile devices (such as smartphones) and social media may be reducing the cognitive resources available for maximum-effort tasks such as our aptitude tests.

Schroeder examined these findings further by analyzing the results for various birth cohorts. Figure 3 here shows the means on the general factor for 18-year-olds tested by the Foundation who were born between 1976 and 2000. As the figure shows, overall performance steadily increased through the 1986–1990 cohort and then decreased through the 1991–1995 and 1996–2000 cohorts. When Schroeder investigated the results for examinees who were tested at age 28, he found a fairly similar curve but with the decline starting with examinees born in 1986 to 1990, who were still showing gains in the 18-year-old scores. So, it appears that the timing of the decline in scores is a function of both (a) the cohort of which an examinee is a member (that is, when their formative years occurred) and (b) the time period when the examinee was tested—that is, whether possible influences of technology and social media had taken effect yet or not.

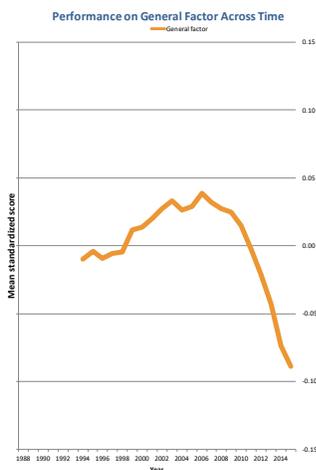


Figure 1

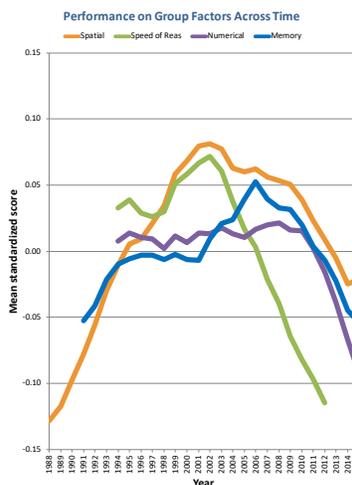


Figure 2

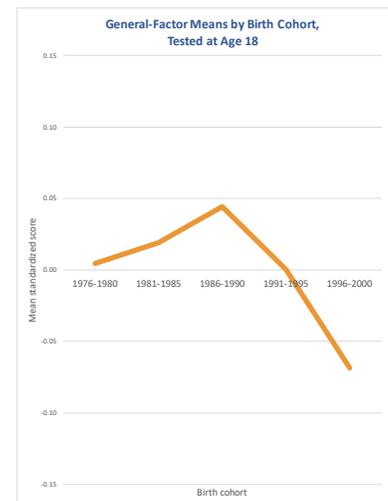


Figure 3

Age Curves for Graphoria, Number Memory, and Color Discrimination

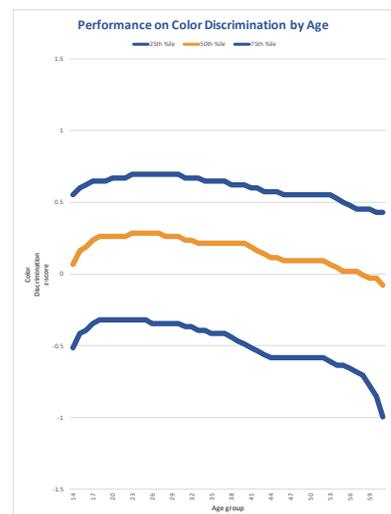
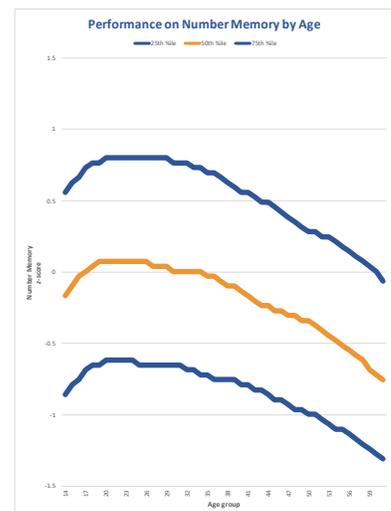
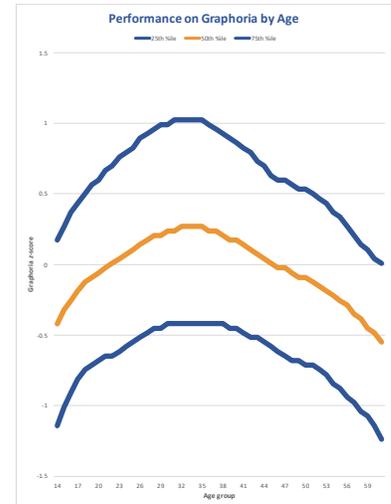
Foundation researchers Linda Houser-Marko and Ashley Brown spent the first third of 2019 constructing new norms and age curves for three Johnson O'Connor aptitude tests: Graphoria (Number Checking; GR), Number Memory (NM), and Color Discrimination (CD). Data collected from 2003 to 2015 were used to construct norms and curves for CD (N = 63,758), while data from 2001 to 2015 were used for GR (71,516) and NM (70,559). Clients whose data were analyzed ranged in age from 14 to 70 years, and about 46% of each sample were female. Because sample sizes were so large, Houser-Marko and Brown were able to construct the norms using one-year age groups for all ages between 14 and 60; data for ages 61 through 70 were treated as a single age group.

In the accompanying figures, the 25th, 50th, and 75th percentiles from the normed GR, NM, and CD z-scores, respectively, are shown across age groups. Age curves for all percentiles (5th to 99th) on each test were shaped similarly.

GR scores increased from age 14 through the early thirties, then declined after the late thirties. For all GR percentiles, these changes in mean z-score across ages were medium-to-large. For example, between ages 14 and 37, scores for the 50th percentile increased .66 units; between the ages of 37 and 61, they decreased by .79 units.

NM scores increased from age 14 to the early twenties, then plateaued between the late twenties and early thirties before falling in older age groups. Improvement in scores with age to peak performance was slight (50th percentile scores increased by .24 units from ages 14 to 23), but the decline in scores after age 30 was more substantial (50th percentile scores decreased .83 units from ages 23 to 61+). The post-peak decrement in performance finished at a level slightly lower in ages 61 and up than was observed at age 14.

CD scores showed less change with age than GR or NM scores. Mean z-scores for the 50th percentile between ages 14 and 25 increased by .22 units, and then decreased by .36 units between ages 25 and 61. However, percentile and age effect seemed to interact, inasmuch as lower percentiles' scores tended to fall faster after they peaked. This is easiest to see in comparisons of very different percentiles. For instance, although the 25th and 75th percentiles, like the 50th, rise only a little between ages 14 and 25 (.19 and .15 units, respectively), the scores for the 25th percentile fall more steeply than scores for the 50th between ages 25 and 61+ (.68 units), while scores for the 75th fall less steeply than scores for the 50th (.27 units) between ages 25 and 61.



Association for Research in Personality: Aging and the Aspects of Openness

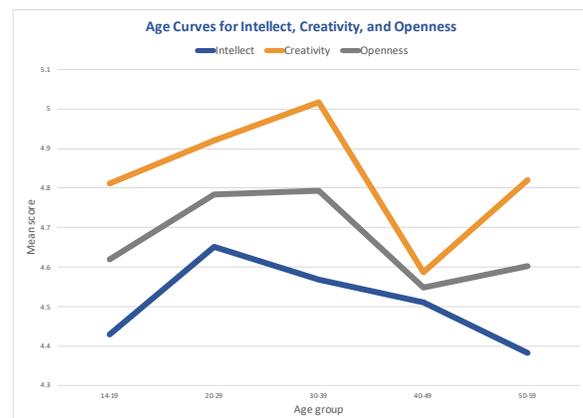
In the first of two conference posters examining the relationships among client demographics, aptitudes, and the personality trait Openness to Experience, Linda Houser-Marko and Ashley Brown replicated and extended a study by personality researchers Donnellan and Lucas (2008), who demonstrated (as other recent research has) a lifelong downward curvilinear trend in trait Openness for cross-sectional data. Houser-Marko and Brown wanted to see not only if the Johnson O'Connor Research Foundation's (JOCRF) older clients were, on average, less "open" (i.e. imaginative and willing to learn new things) than younger clients, but also if one of the two "facets" of Openness was more responsible for the decline than the other. Note here that facets are distinct sub-traits of traits; e.g., the Intellect aspect of Openness roughly corresponds to the "learn new things" part of the trait, while the Creativity aspect corresponds to the part pertaining to imagination or divergent thinking).

Participants (ages 14 – 76, 63% female) were 335 clients of the JOCRF testing program who completed its ability battery and the online Synthetic Aperture Personality Assessment (SAPA) questionnaire, hosted by JOCRF collaborators David Condon (University of Oregon) and William Revelle (Northwestern University). Participants completed the SAPA battery independently, in environments of their own choosing, after completing the JOCRF battery.

Revelle, Condon, and Brown have demonstrated that SAPA's unique online item administration method produces valid statistics when sample sizes are relatively large. Individual scores on trait Openness (20 items) and its aspects (derived from scales developed in 2014 by Condon for SAPA), Intellect (13 items) and Creativity (7 items), were set equal to the mean of the items administered. Two JOCRF tests, Foresight (FO, a divergent thinking test) and

Ideaphoria (ID, a test of verbal-ideational fluency) were included in correlational analyses. Both FO and ID, which are often used at JOCRF as measures of creativity, were significantly positively correlated with Openness and its aspects.

Houser-Marko and Brown divided their sample into five age groups: 14-19, 20-29, 30-39, 40-49, and 50-59 (older clients' data were excluded, as there were only 10 clients in the dataset aged 60-76). Openness, Intellect, and Creativity means for their 10-year age groups are graphed in the accompanying figure. Houser-Marko and Brown presented this research at the meeting of the Association for Research in Personality in June 2019, in a poster entitled "Aging and the Aspects of Openness: Unpacking Cross-Sectional Patterns." Their results generally supported Donnellan and Lucas's contention that Openness to Experience is a curvilinear function of age, rising early in life and falling from middle age onward. Analyses of the aspects of Openness indicated that the Intellect aspect could be described as a curvilinear model at the $p < .05$ level; the same, however, was not true of the Creativity aspect. Here, none of the models was significant at the $p < .05$ level, though the coefficients' patterns suggest that Creativity's age curve could differ from Intellect's. More data are needed to settle the question once and for all.



International Society for Intelligence Research:

Aptitudes and Openness

Using the same participant sample and data collection procedure as for their analyses of aging and the aspects of Openness (above), Houser-Marko and Brown replicated another well-known finding in personality research: i.e. that Openness to Experience is significantly positively correlated to cognitive ability. In their second poster for summer 2019, which was presented at the conference for the International Society for Intelligence Research in July and entitled “Cognitive Abilities, Divergent Thinking, and the Aspects of Openness,” they sought to extend this finding to Openness aspects, asking whether either Intellect or Creativity were more related to some cognitive abilities than to others.

To operationalize cognitive ability, Houser-Marko and Brown used a four-factor model originally developed by Foundation collaborator Richard Haier and his team, plus a single-test “factor” of Verbal ability (the JOCRF English Vocabulary test). The Haier et al. model’s four factors (each of which is composed of two JOCRF tests) are Speed of Reasoning (hereafter, “Speed”), Spatial, Numerical, and Memory.

Houser-Marko and Brown predicted that all cognitive factors in the model would be positively related to Intellect and that a measure of divergent thinking (DT; i.e., scores on the JOCRF Foresight test) would be positively related to Creativity. Results supported the prediction for Creativity and some predictions for Intellect, in addition to replicating familiar findings for Openness.

Among the individuals with scores on both SAPA and the JOCRF tests, all five cognitive

factors as well as DT were positively correlated with Intellect, whereas only DT was positively correlated with Creativity. In addition, Creativity was marginally positively correlated with Speed and Spatial factors.

In regression analyses using the five factors only, Verbal and Speed were significant ($p < .05$) positive predictors of trait Openness, while Spatial was positive and marginal ($.05 < p < .10$). The same was true for the Intellect aspect (except Spatial was neither significant nor marginal), and neither the model nor any of its components significantly (or marginally) predicted Creativity.

When DT (Foresight) was added to the models, the Intellect and Openness models remained significant, and DT made the crucial difference in changing the Creativity model from non-significant to significant. DT was also a significant positive predictor in all three models. Adding DT made Spatial into a positive predictor of Openness ($p < .05$) and a marginally positive predictor of Creativity, as well. Even more intriguingly, adding DT made Numerical into a marginally negative predictor of Creativity. Looking at the regressions alongside the correlations suggests that Numerical is producing a suppressor effect here; that is, one can infer that the part of Numerical that’s independent of Speed, Spatial, Verbal, Memory, and Divergent Thinking may be negatively related to Creativity. Again, more data are needed before Foundation researchers can draw any firmer conclusions.

Announcing the Formation of a New Research Committee

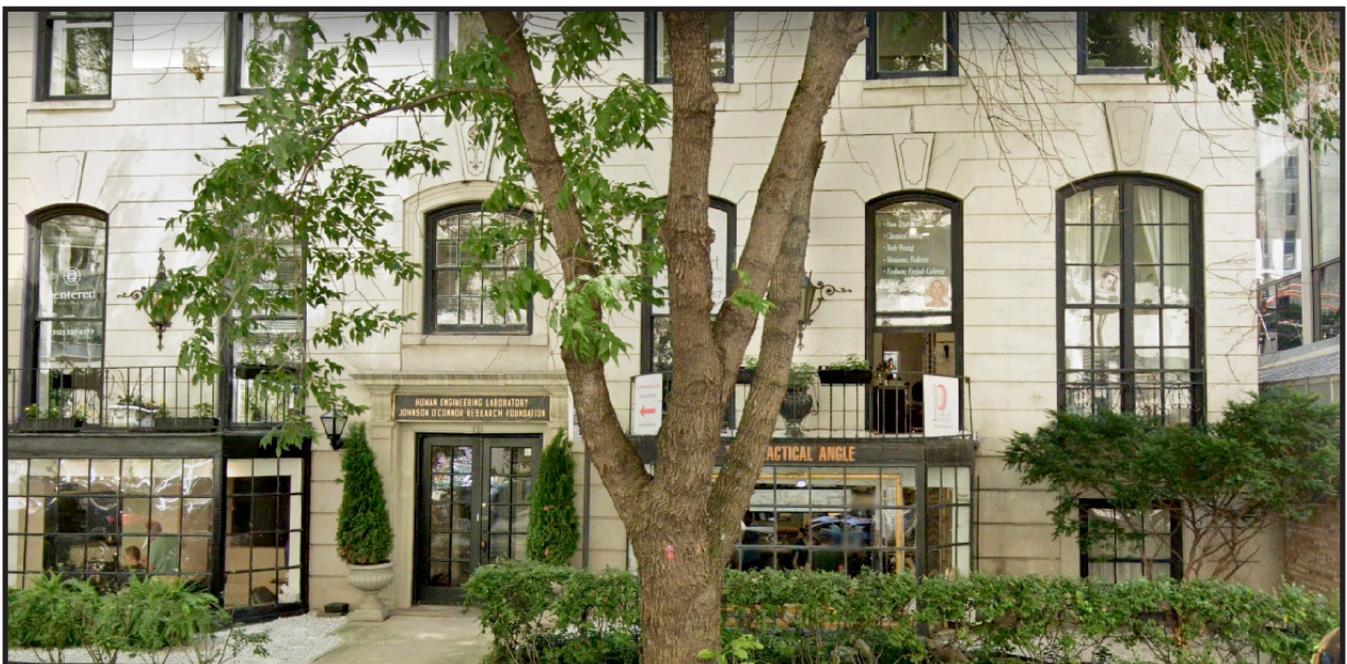
The Board and the Foundation leadership have long sought to augment the flow of new research information from the research department to test administrators. 2019 saw the formation of a research committee, chaired by Holly Wilhelm of our Atlanta office, and including Alex Bureau and Michele Ledbetter. The committee kicked off its activities in October, with a meeting with Dr. Dave Schroeder and Dr. Ashley Brown, Rusty Burke, Foundation President Anne Steiner, and the Chicago lab staff. At the meeting the group discussed potential new research projects, including test improvements that could involve data collection and other involvement from staff. They also brainstormed on how to more effectively train staff to understand research data and to apply new information to summary discussions.

In November, committee members sent a survey to testing staff to determine how best to keep them informed on new findings, and to ascertain their research topic interests. The staff as a whole expressed a desire for more knowledge about incorporating new research information into summary discussions. As a first step toward meeting this objective, the committee started producing a newsletter for the staff on a bimonthly basis. It serves to update test administrators on research activities, with sections such as Ongoing Projects, Resources for Summarizers, and Updating Our Conclusions. The committee also plans to create a short summary of

the salient points of each new Statistical Bulletin, which will be sent to the testing staff upon its release.

Among other survey findings, staff expressed interest in learning more about Word Association, Observation, and Inductive Reasoning, and exploring ways to improve on the current testing methods for these aptitudes. Several projects are already underway to achieve these ends: research committee member Alex Bureau led an item analysis project for the Observation test, with data entry help from several other test administrators. Holly Wilhelm and New York TA Chris Weimer analyzed responses on the Word Association test, helped by additional data entry from Seattle lab director Doug Hastings. The Chicago lab staff, including research committee member Michele Ledbetter, developed a validation questionnaire to help assess clients' self-identifications as related to work approach. These TA-led efforts join those of Will Eells and Alex Bureau, who earlier in the year started validation studies on translators and video game designers. The research committee looks forward to continuing to facilitate collaborations with the research staff in 2020 and beyond.

In order to move toward communicating more research findings to the public, the research committee will write blog entries and articles for the Foundation's website, and post regularly on social media.



161 East Erie Street

Dissemination of Research Findings

In recent years we have continued to present findings from our research in scholarly outlets such as professional conferences and journals. In 2019 we made two presentations at the annual meeting of the International Society for Intelligence Research, which was held in Minneapolis. Dr. Ashley Brown presented a poster by Dr. Linda Houser-Marko and herself titled “Cognitive Abilities, Divergent Thinking, and the Aspects of Openness.” Their research replicated the result that trait Openness to Experience is positively correlated with cognitive ability and extended these findings to show that the aspects (sub-traits) of Openness, Intellect and Creativity, were differentially related to ability. That is, Intellect was positively correlated with all cognitive abilities, while Creativity was only positively correlated with Divergent Thinking (Foresight). Dr. David Schroeder presented “A Negative Flynn Effect in Recent Cognitive-Ability Scores,” in which he presented the latest findings from his work on changes in mean performance on our tests over time.

Also in 2019, Dr. Brown presented another poster by Dr. Houser-Marko and herself titled “Aging and the Aspects of Openness: Unpacking Cross-Sectional Patterns” at the meeting of the Association for Research in Personality. In this presentation, she discussed the relationship between age and trait Openness to Experience, as well as to the trait’s aspects, Intellect and Creativity. Like the ISIR poster, this one presented a replication and extension of previous research; i.e. our data was used to demonstrate not only that, as other psychometricians have noted, Openness declines with age, but also that it’s possible that Openness’s aspects behave differently. The poster showed that Intellect, like Openness, declined with age; the same could not be said with certainty for Creativity.

In 2019 we continued to collaborate with Dr. Rex Jung on neuroimaging studies of aptitudes. Articles from our previous work with Dr. Jung continued to receive attention in scholarly circles in 2019. The Jung et al. article in *Frontiers in Psychology* in 2015 has now been viewed 13,169 times and cited in 34 other scholarly articles. The 2014 PLoS ONE article by Dr. Jung and his team has been viewed by 4,137 persons and cited 10 times.

Other scholarly work sponsored by us continued to have impact in 2019. Our 2010 article with Dr. Richard Haier, with whom we collaborated on earlier neuroimaging research, and his associates in *BMC Research Notes* has now been viewed by over 13,000 persons and cited 20 times in other articles, while our 2012 BMC article by Dr. Schroeder and others has been viewed by 2,149 persons and cited 4 times. In addition, our 2009 article with Haier and others in *Intelligence* has been cited 98 times, and our 2010 article with Dr. Cheuk Tang and others in *Intelligence* has been cited 74 times.

With regard to earlier publications, Dr. Schroeder’s 2004 article with Drs. Timothy Salthouse and Emilio Ferrer in *Developmental Psychology* has now been cited in 176 scholarly publications, and his article with Salthouse in *Personality and Individual Differences* has been cited 90 times. Our 2001 *Intelligence* article by Dr. Scott Acton, a former research assistant in the Research Department, and Dr. Schroeder has been cited 81 times.

We would also note that Dr. Rex Jung is serving as the president of the ISIR in 2020. Dr. William Revelle, who was the president of the ISIR in 2019, was the graduate advisor of our researcher Dr. Ashley Brown, along with a number of graduate students who worked in the Research Department over the years.

In 2020 Dr. Brown had a presentation accepted for presentation at the annual meeting of the Association for Psychological Science, but the conference was canceled because of the coronavirus pandemic.

Recent Technical Reports

2019-1	Occupational Plots for the Foundation's Standard Battery Displayed by Occupation	D. Schroeder, A. Brown
2017-1	Occupations in Education	C. Condon, D. Schroeder
2013-1	Sex Differences in Variability	D. Schroeder
2012-1	Aptitudes, Vocabulary, and Educational Attainment	D. Schroeder
2012-2	The Aptitudes of Engineering Students	C. Condon, D. Schroeder
2012-3	Four Studies of the Self-Directed Search	D. Schroeder

Recent Statistical Bulletins

2019

2019-1	Updated Occupational Plots for the Foundation's Standard Test Battery	David Schroeder Ashley Brown
2019-2	The Foresight Aptitude and Creative Achievement	Linda Houser-Marko, Rusty Burke
2019-3	Research Proposal: Video Game Designer Study	Alex Bureau
2019-4	Occupational Plots for the Self-Directed Search Scales	David Schroeder, Ashley Brown
2019-5	Occupational Plots for Satisfied Versus Dissatisfied Examinees	David Schroeder, Ashley Brown
2019-6	Age Curves for the Graphoria, Number Memory, and Color Discrimination Tests	Ashley Brown, Linda Houser-Marko
2019-7	Occupational Plots for Art-Related Occupations	David Schroeder, Ashley Brown
2019-8	Occupational Plots for the Grip Test	David Schroeder, Ashley Brown
2019-9	How to Write a Statistical Bulletin	Amanda Summers, Linda Houser-Marko, Michele Ledbetter

2018

2018-1	Long-Term Stability for Number Facility	David Schroeder
2018-2	Summary of Long-Term Stability Findings	David Schroeder
2018-3	Writing Speed: A Series of Analyses	David Schroeder
2018-4	Information About Norms for each Test	Linda Houser-Marko
2018-5	Research Proposal: The Aptitudes of Translators and Interpreters	Will Eells

2017

2017-1	Poster Presentation for the 29th Annual Association for Psychological Science Convention	Linda Houser-Marko
2017-2	A Neuroimaging Study of the Visual Designs Test	David Schroeder
2017-3	Tweezer Dexterity Test Changes and New Norms for Worksample 18 KA	Linda Houser-Marko, David Schroeder

Recent Publications

- Bezruczko, N., Manderscheid, E., & Schroeder, D. H. (2016). MRI of an artistic judgment aptitude construct derived from Eysenck's K factor. *Psychology & Neuroscience*, 9, 293-325. doi: <http://dx.doi.org/10.1037/pne0000064>
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Recent Presentations

- Houser-Marko, L. S., & Brown, A. D. (2019, July). *Cognitive abilities, divergent thinking, and the aspects of Openness*. Poster session presented at the annual meeting of the International Society for Intelligence Research, Minneapolis, Minnesota
- Schroeder, D. H. (2019, July). *A negative Flynn Effect in recent cognitive-ability scores*. Paper presented at the annual meeting of the International Society for Intelligence Research, Minneapolis, Minnesota.
- Houser-Marko, L. S., & Brown, A. D. (2019, June). *Aging and the aspects of Openness: Unpacking cross-sectional patterns*. Poster session presented at the biennial meeting of the Association for Research in Personality, Grand Rapids, Michigan.
- Houser-Marko, L. S. (2018, July). *Person-environment fit as seen in college majors and group-factor cognitive ability patterns*. Poster session presented at the annual meeting of the International Society for Intelligence Research, Edinburgh.
- Houser-Marko, L. S. (2018, May). *Perceived person-job fit and relative abilities and interests for popular occupational fields*. Poster session presented at the annual meeting of the Association for Psychological Science, San Francisco.
- Schroeder, D. H. (2018, May). *Declines in cognitive-ability scores: A negative Flynn Effect?* Poster session presented at the annual meeting of the Association for Psychological Science, San Francisco.
- Houser-Marko, L. S., & Schroeder, D. H. (2017, May). *A longitudinal study of abilities and interests in STEM- and people-oriented fields*. Poster session presented at the annual meeting of the Association for Psychological Science, Chicago.
- Schroeder, D. H. (2017, May). *Secular trends in specific abilities: Understanding the Flynn Effect*. Poster session presented at the annual meeting of the Association for Psychological Science, Chicago.
- Bezruczko, N., & Schroeder, D. H. (2017, February). *Artistic-judgment aptitude factors correlate significantly with increased gray matter*. Poster session presented at the annual meeting of the American Association for the Advancement of Science, Boston, MA.

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