NYC's Firefighter Exams in Federal Court, as Seen by One of the Plaintiffs' Experts

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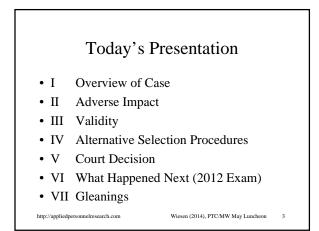
Why Did You Invite Me?

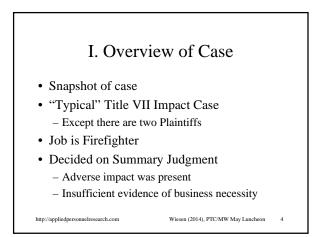
- Insider's view of a prominent case
 Why decided on summary judgment in 2009
- What happened since 2009 - **Outsider's** information on most recent exam
- What we can learn from the case Not as much as we would like!

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- Read Judge Garaufis' Memorandum and Order

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Snapshot of Case

- Challenge to NYC Firefighter Entry Exam
 - minimum qualifications
 - written test

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- Physical Performance Test (PPT)
- Case brought by DOJ: Blacks and Hispanics
- Vulcan Society intervened for Blacks
 - challenged more parts of exam

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"Typical" Title VII Impact Case

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Adverse Impact

- Validity
- Alternative Selection Procedures

Job of Firefighter

• Very hands-on

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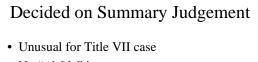
- Teamwork important on fireground
- Supportive environment in station
- Supportive environment in academy
- Verbal communication important
- College is not typical nationwide

Four Challenged Practices

• P/F use of the two exams

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· Ranking based on the two exams



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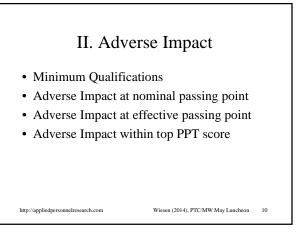
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• No "triable" issues

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- Court order and memorandum of 2009 - Very clear statement of facts and reasoning
- We will review the court's reasoning



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Minimum Qualifications (MQs)

- 30 college credits (any courses)
- Driver's License

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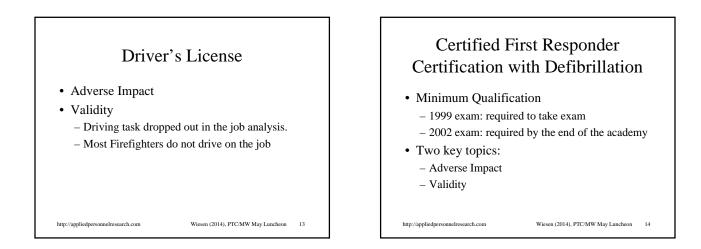
- Certified First Responder Certification with Defibrillation
- In short, there is no validation of these MQs

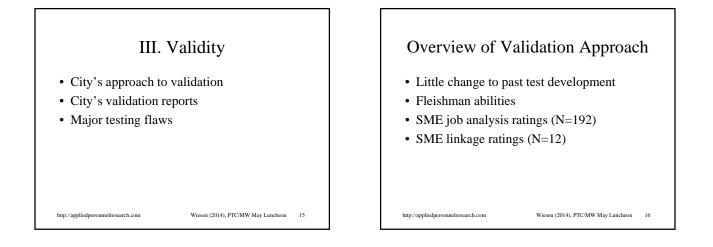
Validity of 30 College Credits

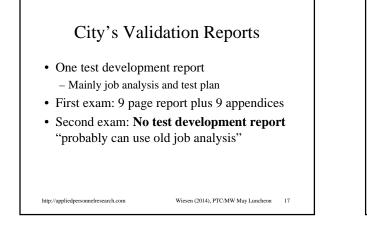
• City employee said:

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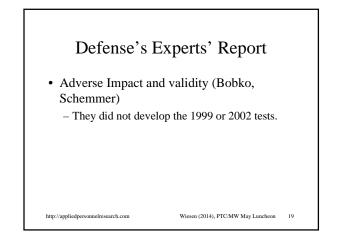
"... the education requirement...was something that Commissioner [name redacted] was extremely hepped up about. He insisted that an education requirement be added. What Commissioner [name] wanted, Commissioner [name] got."

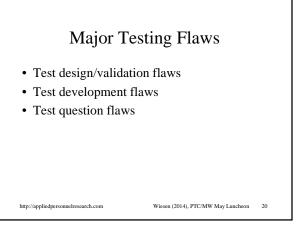


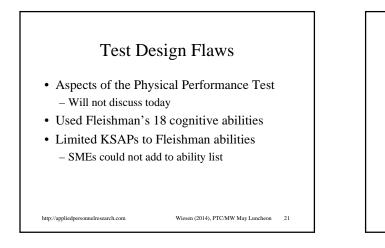


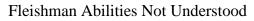












- "Linking Panel" SMEs did ability-task linkages and rated abilities
 - 3/4 of these SMEs did not understand some (many?, most?) of the Fleishman abilities

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• Examiners who wrote questions also **did not fully understand** the Fleishman abilities

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SME Deposition: Fleishman Abilities

- SME example of Perceptual Speed: Remembering the location of objects in a smoky room
- But this is an example of Memorization

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SME Deposition: Fleishman Abilities

- SME example of Timesharing: A situation where one firefighter wanted to go home early and another firefighter was willing to come in early to cover for him.
- But this is not an example of Timesharing.
- This SME said he did not find any of the ability area definitions confusing.

SME Deposition: Fleishman Abilities

- SME deposition:
- Q. With respect to the part of understanding what the person was writing on the board during the drill, would you say that's written expression or written comprehension?

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• A. I'm not sure.

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SME Deposition: Fleishman Abilities

• SME deposition:

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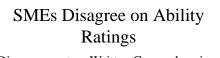
- After having the definition of Deductive Reasoning read to her and on being asked how important it is to the job, one SME said:
 - "Again, I don't understand the definition. I'm sorry."

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Lack of Care in SME Ratings
One SME rated Written Expression as "Important" for 4 tasks that do not involve writing:

Climbing and portable ladder activities
Building entry
Search
Extrication



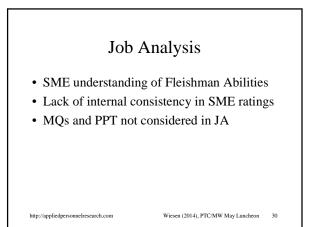
- Disagreement on Written Comprehension for Size Up
- 3 SMEs rated Written Comprehension as 0 or 1
- 4 SMEs rated it 3 (the highest rating)

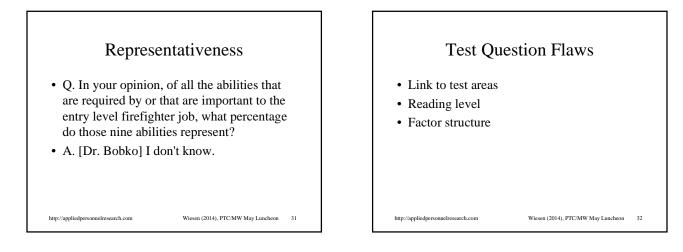
Test Development Flaws

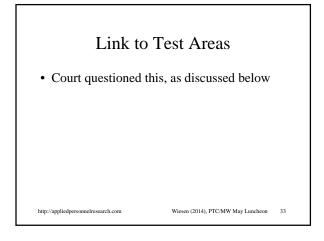
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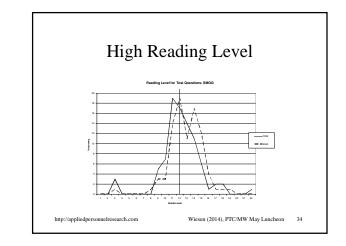
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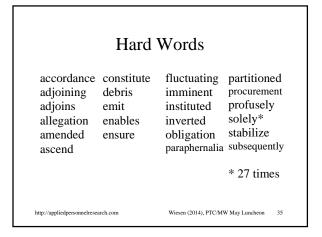
- Job analysis
- Test questions

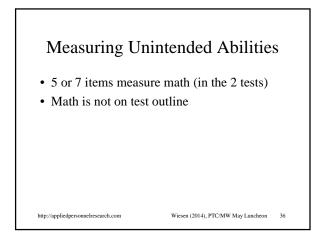


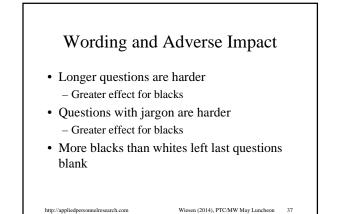


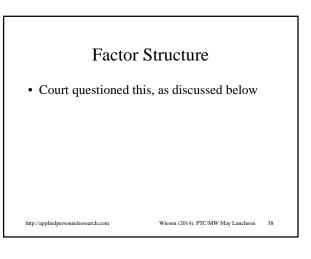


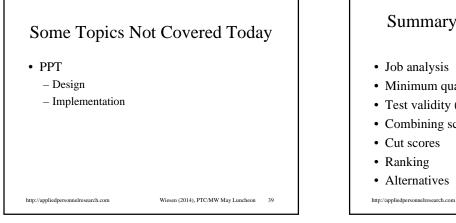








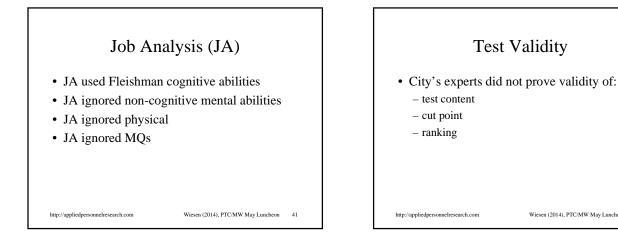




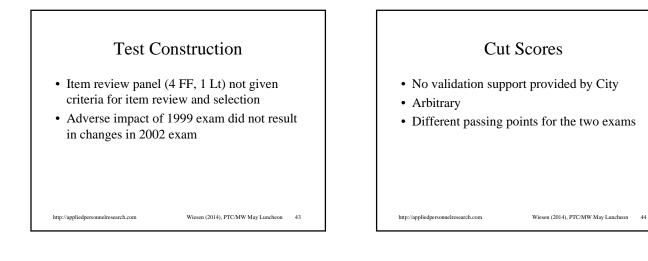


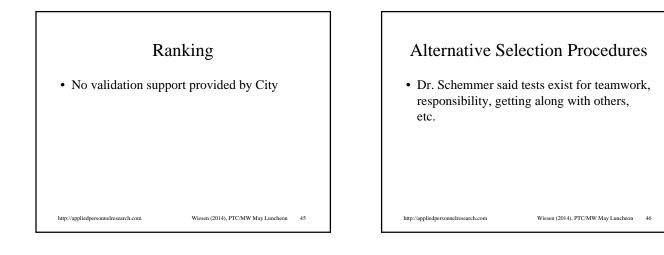
- Job analysis
- Minimum qualifications
- Test validity (including test construction)
- Combining scores
- Cut scores
- Ranking
- · Alternatives

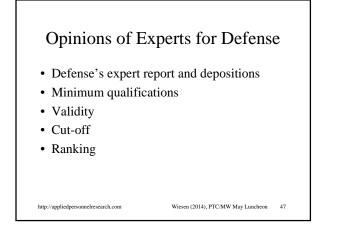
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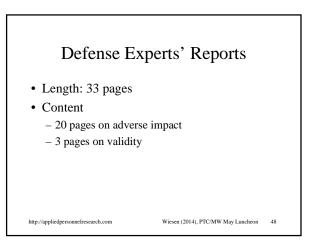


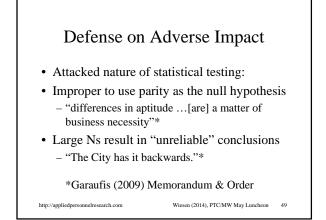


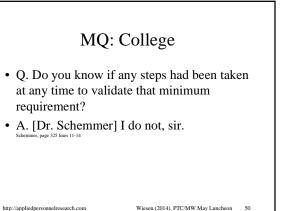












MQ

- None of the approaches described in this article by the City's expert were used:
 - Bobko (2005) Process For Content Validation Of Education And Experienced - Based Minimum Qualifications: An Approach Resulting In Federal Court Approval. *Personnel Psychology*, 58, 771-799.

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Bobko on Validity of 7029: P/F

- Q. Is what's in this report, the Bobko, Schemmer report, sufficient to establish that the City's use of Exam 7029 as a pass/fail screening device with a cutoff point of 84.705 is consistent with job relatedness and business necessity?
- A. [Dr. Bobko] No.

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Bobko on Validity of 7029: Ranking

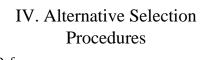
- Q. Is it your opinion that what is in this report is sufficient to establish that the City's rank/order processing and selection of candidates from the Exam 7029 eligibility list is job related and consistent with business necessity?
- A. [Dr. Bobko] No.

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Bobko on Validity of 2043: P/F

• Ditto

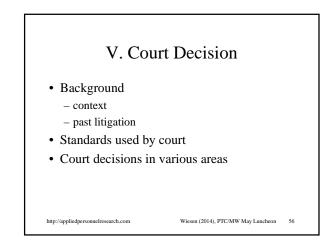


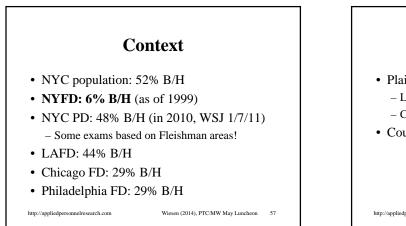
• Defense:

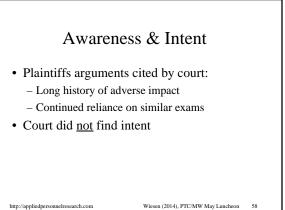
- Oral is impractical
- Silent on written non-cognitive measures
- Plaintiffs:

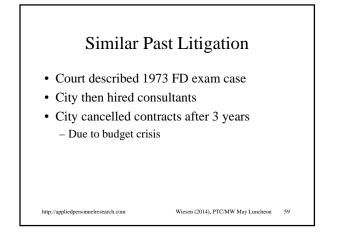
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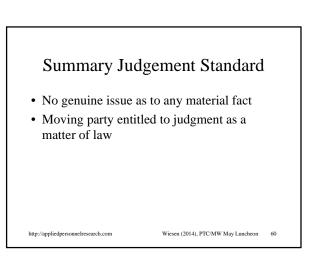
- Other FDs use alternative selection procedures
- Tenable tests of "softer" areas exist

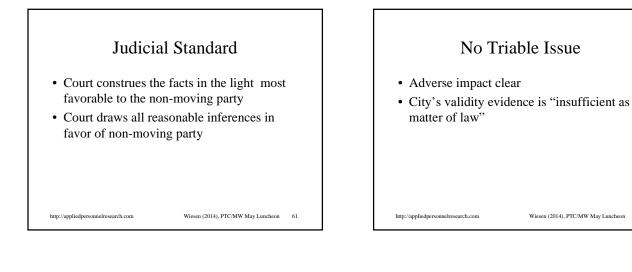


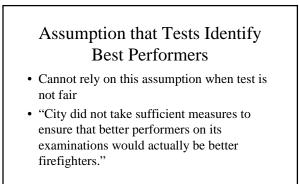








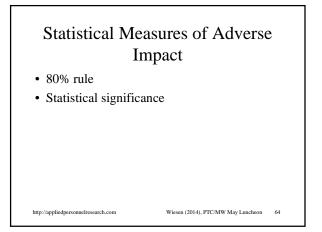




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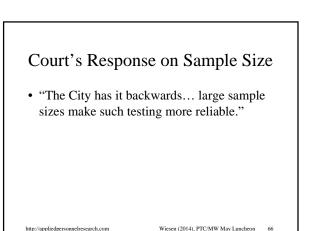


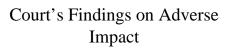
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City's Arguments on Adverse Impact

- Analyses assume perfect parity, which is unrealistic
- Large samples yield erroneous findings
- Rely only on 80% rule

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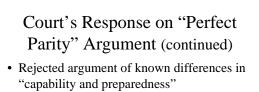




- Between 10.5 and 33.9 units of standard deviation for P/F
- Between 4.6 and 9.7 units of standard deviation for ranking
- Much greater than 2nd Circuit standard of 2-3 s.d.
- Accuracy of Plaintiffs' statistical calculations undisputed
 Mup//appliedpersonnelresearch.com
 Wiesen (2014), PTC/MW May Luncheo
 67

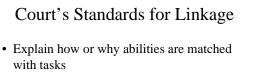
Court's Response on "Perfect Parity" Argument

- "...properly assume that racial or ethnic groups will perform equally well...."
- Null hypothesis of no difference is legally appropriate



- City needs to show validity to support such an argument
- Cannot use aptitude disparities in the Adverse Impact stage of case

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• SMES given clear linkage task

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• Confirm reliability or agreement of linkage ratings

Overview of Job Analysis

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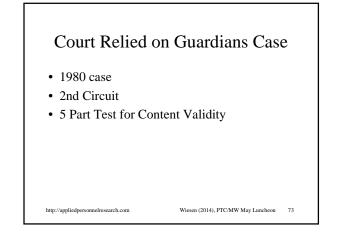
- About 10 FF/SMEs reviewed existing task list
- 21 Fleishman abilities rated
- Ability to task linkage - Linking Panel: 12 FD SMEs

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Court Critique of Test Development

• No review of whether an item measured the intended ability

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Guardians 5 Part Test for Content Validity

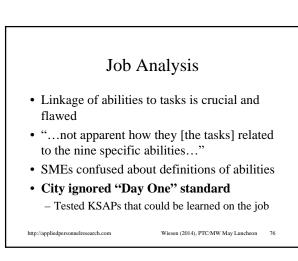
• Suitable job analysis

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- Reasonably competent test construction
- Test content must be related to job content
- Test content must be representative of job content
- Scoring system must usefully select those applicants who can better perform job

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Questionable Reliance on Landy Study

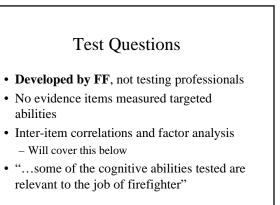
- Landy study used as a starting point only
- Union resisted Landy's job analysis efforts

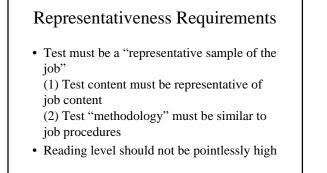
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• Landy report labeled "Draft"

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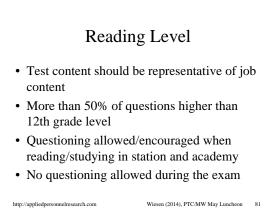
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Test Areas

- · Tests ignored most important cognitive abilities (oral comprehension/expression)
- Tests ignored important non-cognitive abilities (e.g., teamwork, dependability)
- "City has no excuse for its failure to test important cognitive and non-cognitive abilities."





- Guardians warned against setting cut score
 - based on # openings or civil service law (70%)
 - at a point where its unreliability has an extensive impact
- Garaufis: "...no evidence that cutoff bears any relationship to the necessary qualifications..."

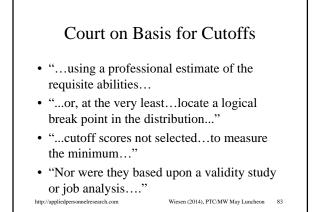
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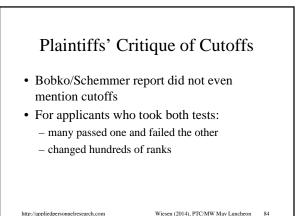
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• "...rank ordering...requires strong justification"

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- "...Dr. Bobko...stated his report did not establish validity of using rank[s]..."
- Small (chance) changes in scores = large (important) differences in ranks

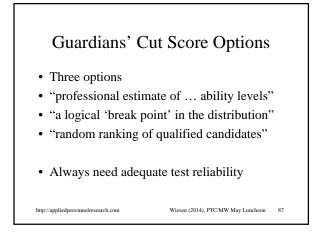
Wiesen (2014), PTC/MW May Luncheon

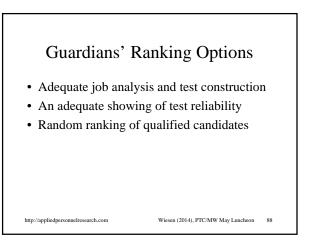
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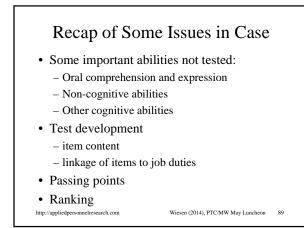
City Tried to Put Burden on Plaintiffs

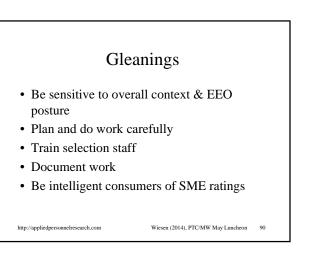
- City: Plaintiffs did not prove test is invalid
- Court: "...City bears burden to show [validity]..."

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GleaningsGleanings• SMEs should not write items
- Exact role not spelled out in Garaufis Memo• Represent important/large parts of job• Need good linkage of abilities to job tasks• Omit major parts of job only with reason• Need good linkage of abilities to job tasks• Defend passing point with job relatedness
- Especially in a multiple hurdle process• Consider "Day One" needs
- Avoid testing areas learned on job• Reliable test scores• Avoid unnecessarily high reading level• Reliable test scores

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• Pass point ("Cutpoint") – Basing the passing point for the written exam

- Basing the passing point for the written exam on the number of openings denied candidates the opportunity to take the second component of the exam
- Perhaps ruling would be different with a one component exam

"Big gun" experts should be hired early on
 Cannot save test after-the-fact

Gleanings

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VI What Happened Next
Bobko/Cline Exam ("NYC Exam 6019") – Held 2007

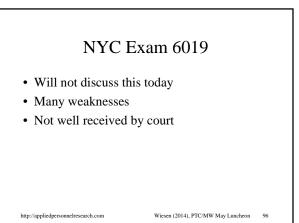
- PSI Exam ("NYC Exam 2000")
 - Held 2012

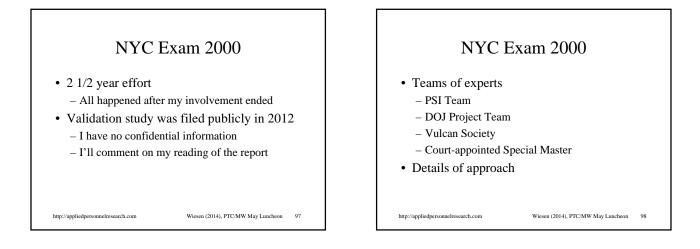
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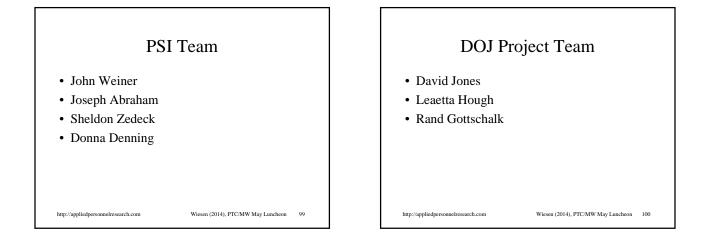
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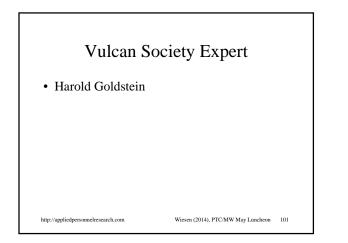
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- List valid for 4 years

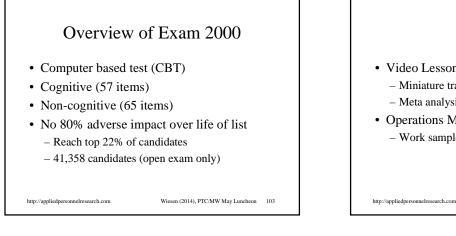












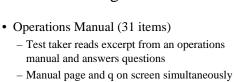
Cognitive

- Video Lesson
 - Miniature training and evaluation
 - Meta analysis (Robertson & Downs, 1989)
- Operations Manual
 - Work sample

Cognitive • Video Lesson (26 items) - Lecture on Equipment Operation and Use - Narrated slide show on Equipment Safety - Student-Instructor Questions & Answers • Measures - Ability to learn and apply information - Listening comprehension - Reasoning Wiesen (2014), PTC/MW May Luncheon 105

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Cognitive

- Measures
 - Reading Comprehension
 - Basic Arithmetic
 - Reasoning

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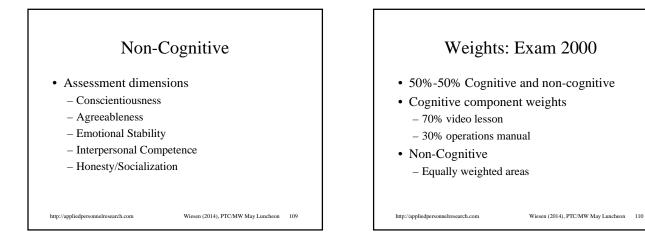
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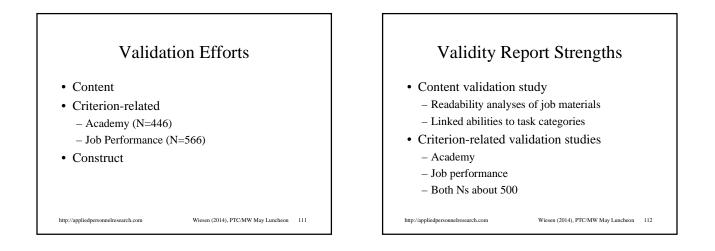
Wiesen (2014), PTC/MW May Luncheon 104

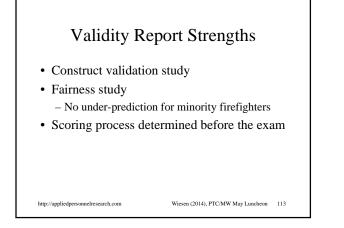
NYC Websites for FF Exam • Tutorial #1 - Using the CBT System - http://www.nyc.gov/html/dcas/html/work/firefi ghter_cbt-tutorials_1.shtml • Sample questions (21minutes) - http://www.nyc.gov/html/dcas/html/work/firefi ghter_cbt-tutorials_2.shtml (URLs last accessed on 5/18/2014)

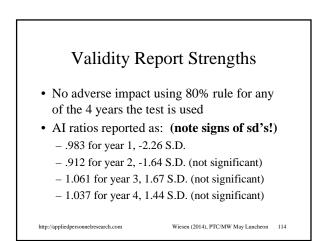
Wiesen (2014), PTC/MW May Luncheon 107

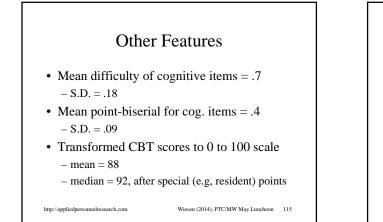
Non-Cognitive • Background questions - Dependability - Activity - Agreeableness - Even Tempered - Low Anxiety - Self-Esteem











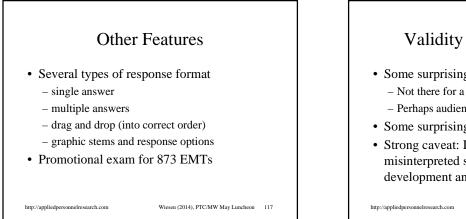
Other Features

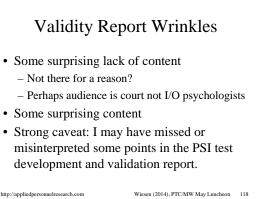
- Computer administered – items not in same order for all booklets
- Multiple forms of cognitive test
- Multimedia
 - video
 - audio

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- graphic images

Wiesen (2014), PTC/MW May Luncheon 116



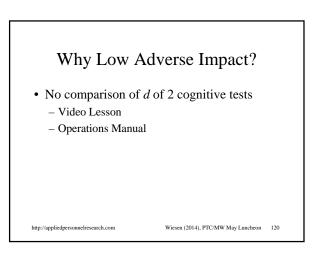


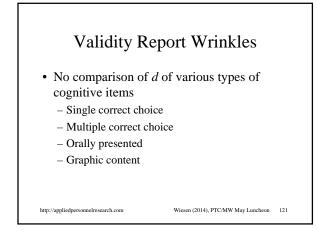
Validity Report Wrinkles

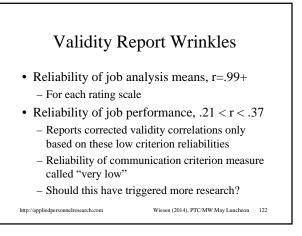
• No discussion of why AI is low

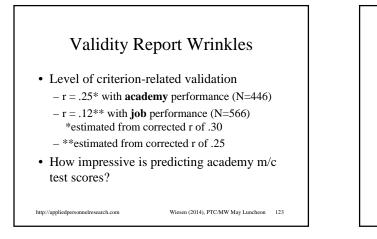
http://appliedpersonnelresearch.com

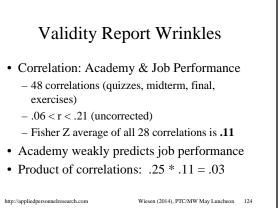
- No report of *d* for non-minority vs. minority
- No report of mean and S.D. by racial/ethnic group











Validity Report Wrinkles

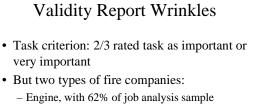
- Total score precision of measurement, alpha=.88
- Alternate CBT Forms correlate with validated Form A, r >= .87, uncorrected*

Wiesen (2014), PTC/MW May Luncheon 125

• But .88 squared is .77

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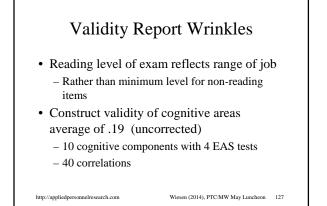
*Did not say "corrected"



- Ladder, 38% of job analysis sample

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- Highest S.D. for engine and ladder tasks
- Did 2/3 criterion eliminate much of FF job?



Validity Report Wrinkles

- No formula given for overall score - Weighted 50-50, but did they standardize?
- No report of number certified each year, or overall, by racial/ethnic group

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Wiesen (2014), PTC/MW May Luncheon 130

Wiesen (2014), PTC/MW May Luncheon 132

Validity Report Wrinkles
Job analysis "Quality Check Items"

5 tasks and 5 abilities clearly not job related

Surveys excluded if at least 3 tasks rated:

Performed: Yes and Importance > 2 Frequency > 2

Surveys excluded if at least 3 abilities rated:

Important >2 and Day 1 Yes

Too lenient!

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Why Low Adverse Impact?

- Minimum qualifications
- HS diploma or GED

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- Plus one of the following
- 15 college semester credits
- honorable discharge from military
- 6 months paid work experience
- Applicants above average, on average

Why Low Adverse Impact?

- Practice test video
 - better prepared for exam, less test anxiety
 - less stereotype threat (minority candidates in video)
 - may have caused self-selection
- Question types

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- Select several correct answers (M/C)

Wiesen (2014), PTC/MW May Luncheon 131

Wiesen (2014), PTC/MW May Luncheon 129

Why Low Adverse Impact?

• Low passing point

- 97.7% pass open exam
- 97% of minorities pass
- P/F AI at passing point (means not reported)
- "Low" AI at effective passing point
- Passing point set 2 SE below the point that predicts "just adequate" performance

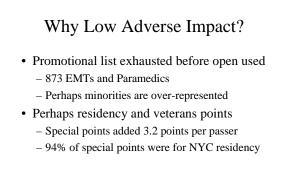


Why Low Adverse Impact?

Wiesen (2014), PTC/MW May Luncheon 134

- Cognitive test based mainly on 26 items – But 26 items may have reliability of .7
- A few items were deleted - But not from all forms of the test

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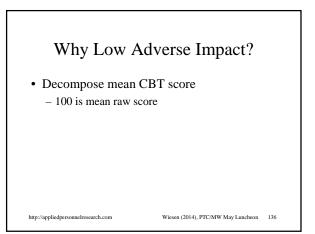


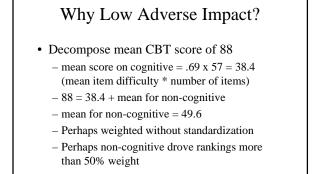
Wiesen (2014), PTC/MW May Luncheon 135

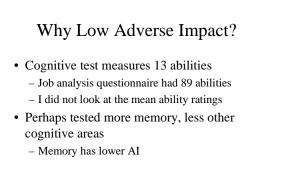
Wiesen (2014), PTC/MW May Luncheon 137

http://appliedpersonnelresearch.com

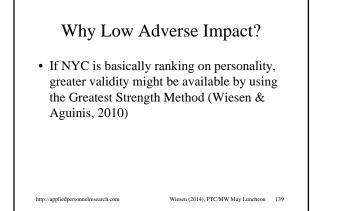
http://appliedpersonnelresearch.com







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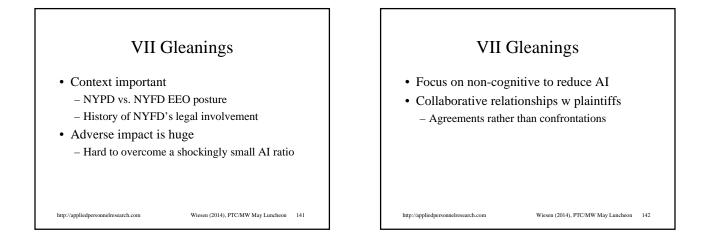
Questions on PSI Test

- Does the PSI test push the field forward?
- If so, how?

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• If not, why the low adverse impact with certification of the top 20% of test takers?

Wiesen (2014), PTC/MW May Luncheon 140



References Garaufis, N. G. (2009). Memorandum & Order in USA and Vulcan Society, et al. vs. City of New York, et al., July 22, 2009. United States District Court; Eastern District of New York. Retrieved May 20, 2014 from http://www.clearinghouse.net/chDocs/public/EE-NY-0192-0008.pdf. El-Ghobashy, T. (2011). Minorities Gain in NYPD Ranks. Wall Street Journal, 1/7/2011.

