

Unit assignments

Some units will consist of assignments from both the Aamodt text and the course pack (as Unit 1 does). Therefore when I refer to "Aamodt", I am referring to the text. If I do not indicate where the material is from, you will find it in the course pack.

Study Objectives: Page and paragraph designations. At the beginning (or end) of each objective I have indicated the page and paragraph where the answer to the objective can be found. The page is listed first, followed by a comma, and then the paragraph number is provided. The paragraphs should be counted down from the top of the page. Therefore "6,3" should be read as page six, the third new paragraph from the top of the page. When referring to material at the top of a page when the paragraph is continued from the previous page I will use a "0". Therefore, "12,0" would mean that the answer to the objective can be found on page 12 at the top of the page. I try to be as accurate as possible with these numbers. However, sometimes my computer makes a mistake - so if the answer cannot be found in the designated paragraph always look at the paragraphs that precede and follow the one that is indicated. If there are mistakes, please bring it to my attention in class so that I can inform the other students.

Unit 1: The history of I/O and OBM

1. Aamodt, Chapter 1
2. Dickinson, A. M. (2016). Credentialing in behavior analysis. Unpublished ms.
3. Dickinson, A. M. (2000). The historical roots of Organizational Behavior Management in the private sector. *Journal of Organizational Behavior Management*, 20(3/4), 9-58.

I have also included the following optional article in the unit. I have asked you to learn some of the material from the Bucklin et al. article which I abstracted and embedded in the study objectives; thus you don't have to read the article unless you want to.

Bucklin, B. R., Alvero, A. J., Dickinson, A. M., Austin, J., & Jackson, A. K. (2000). Industrial-Organizational Psychology and Organizational Behavior Management: An Objective Comparison. *Journal of Organizational Behavior Management*, 20(2), 27-75.

Suggested further readings: I have not included the following materials in your course packs, but they are stellar and I highly recommend them.

Abernathy, W. B. (2013). Behavioral approaches to business and industrial problems: Organizational Behavior Management. In G. Madden (Ed.), *APA Handbook of Behavior Analysis, Volume 2* (pp. 501-521). Washington, DC: American Psychological Association. Our library has an electronic copy of the book and you can download the chapter for free.

Johnson, C. M., Redmon, W. K., & Mawhinney, T. C. (Eds.). (2001). *Handbook of organizational performance: Behavior analysis and management*. New York: Haworth. ISBN 0-7890-1086-0. This is the latest handbook in OBM and the articles are excellent.

Komaki, J. L., Coombs, T., Redding, T. P., Jr., & Schepman, S. (2000). A rich and rigorous examination of applied behavior analysis research in the world of work. *International Review of Industrial and Organizational Psychology*, 15, 265-367. This is an incredibly complete review of all well designed behavioral field experiments.

Johnson, C. M., & Beehr, T. A. (Eds.) (2011). Special issue: Integrating Organizational Behavior Management and Industrial and Organizational Psychology. *Journal of Organizational Behavior Management*, 31(4).

Do not panic over the number of study objectives! Many are not for the exam.

Aamodt text: Chapter 1

1. 2,4. State the difference between IO psychology and business fields. You should refer to both and include the material that follows “such as” in regards to the business fields. (yes, I am dropping the “slash” in I/O –it’s too annoying to type it over and over again)
2. 2,5-3,0. Not for the exam, but note that IO psychologists are not clinical or counseling psychologists. By the way, other specializations would be very annoyed that Aamodt states that IO is distinguished from them because we adopt a scientist-practitioner model. All specializations (clinical, behavior analysis) have adopted this model. And, in fact, clinical psychology was the first to officially adopt this model ~1949. It is commonly referred to as the Boulder Model because it came from a conference held in Boulder, CO.
3. 4,2-5,0. Not for the exam again, but note what the “I” and “O” mean in IO psychology (also, personnel psychology = industrial psychology). I bet this is something you have been wondering about. The distinction is not valid any more as both of these areas overlap, but the historical name for the field and the distinction continues...)

The name of our field varies from country to country. In Europe, for example, our field is called “work psychology,” and in Great Britain our field is called “occupational psychology.”

4. 5,4 Based on the following material be able to answer:
 - A. What is the oldest “organized” area of application in I/O – the one that still dominates the field today? The answer: Personnel Selection.
 - B. When and how did this specialization get started? The answer: Selection and placement of military personnel in WWI and WWII.
5. 7, 2-8,1. Because I am going to cover the Hawthorne studies in detail later in this course, I am not going to focus on them now; for now just learn the material below. They were critical to the development of IO. These studies actually put the “O” in IO psychology; prior to that the field focused primarily on the “I”.

For the exam:

- A. State the name of the event that expanded the scope of IO psychology from industrial psychology, personnel issues, to organizational psychology, including human relations, the work environment, and attitudes (in particular, job satisfaction) or:
- B. State the reason why the Hawthorne studies were critical to the development of IO psychology.
6. 8,2. Not for the exam. No other event in the history of IO psychology increased the number of IO psychologists than the civil rights legislation mentioned in this paragraph. These laws also account for the fact that personnel selection still dominates the field of IO psychology today. I do not cover any of these topics in this course because we offer a specialized course in Personnel Selection & Placement (PSY 6430).

7. 8,3. Not for the exam. It's cool that Aamodt recognizes us here. However, it was **not** due to Skinner's book *Beyond Freedom and Dignity*. My article in this unit describes the actual events that led to OBM. Also, the book that influenced most individuals with respect to the development of behavior analysis was *Science and Human Behavior* (1953).
8. 8,4 Not for the exam, but note the last sentence in this paragraph. This is absolutely true. I am often asked about the differences between "traditional" IO psychology training programs and ours; this is one of the major differences. And, as I shall come back to later, helps explain why there is a "deep divide" between IO psychology and OBM: most IO psychologists do not accept our single subject research designs and visual analyses as "scientific."

Do you know that Dr. Huitema's Ph.D. is actually in IO psychology, not statistics? But because of the traditional emphasis on statistics in IO, many IO psychologists became statisticians.

9. 10, Table 1.3

A. State the two top employers of MA level I/O psychologists, in rank order (you do not have to learn the percentages). Note that these two types of employers account for over 80% of MA level IO psychologists.

B. State the three top employers of Ph.D. level I/O psychologists, in rank order (you do not have to learn the percentages). Note that these three types of employers account for almost 90% of Ph.D. level psychologists

Not for the exam, but note that **40%** of Ph.D. level IO psychologists work in universities while 25% work in consulting firms and 23% work in the private sector. There is quite a difference in the percentages of those who work in universities vs. consulting firms and the private sector.

Not for the exam, but note the differences in the percentages between the percentage of Ph.D. level IO psychologists and the percentage of MA level IO psychologists who work in the *private sector*. MA level psychologists are much more likely to work in the private sector than are Ph.D. level psychologists. These percentages are important to you when you are making career decisions (see also the last sentence in 10,2: I would now add to the list "process improvement" specialist – many of our MA students have gotten jobs in this area).

10. 10,3, last sentence. In 2014, the Bureau of Labor Statistics indicated that the opportunities of IO psychologists are expected to grow by what percentage between 2012-2022?

The following will not be on the exam: To get an idea of the growth of the field, look at Table 1.2 the number of members in the main professional association, years 1945 (130 members), 1960 (700 members), 1970 (1,100 members), 1980 (1,800 members), 1990 (2,800 members), 1995 (4,500 members), 2000 (5,700 members), 2010 (8,000 members), and 2014 (8,300). Wouldn't it be nice if the OBM Net had that many members?

Finally, when looking for a job and the type of job titles relevant to IO psychology (in addition to the ones listed in Table 1.4), I strongly recommend that you look at the jobs listed through the Society for Industrial/Organizational Psychology:

<http://www.siop.org/JobNet/default.aspx>

Our students often forget to check this web site when they get to a point when they are looking for jobs!

11. 10,4. Not for the exam. The text gives the median salaries for MA and Ph.D. level IO psychologists I thought you would find the following information about salaries interesting (latest survey is the 2012 survey; they are conducting a new one this year).

Starting salaries. The median *starting* salary for new Ph.D.s is ~ \$78,000, regardless of whether they accept a position with a university or an applied setting (I can assure you, however, not here at WMU – our faculty start out in the mid to upper \$50,000s). The median *starting* salary for MAs is ~ \$64,000 – however, I believe this figure is high, based on the starting salaries of our recent graduates; that figure ranges between \$40,000-\$50,000.

Not surprisingly, Ph.D.'s who work at universities/colleges make statistically significantly less money than those who work in applied settings (\$104,000 versus \$135,000 respectively). The median academic salary was *next to last* (the last was nonprofit organizations).

The good news is that while the median income for women (doctoral and masters combined) is still 15% lower than the median income for men, and the mean income for women is 20% lower than the mean income for men (taking into consideration type of degree and length of time since obtaining the degree), this discrepancy decreased since the last survey in 2009 **for the first time since 1982 and is the smallest discrepancy since 1982.**

Also, alas for females, at WMU, females make less than males at **all** faculty ranks. At the full professor rank, females are paid an average of \$10,300 (10%) less; at the associate level, \$6,400 (8%) less; at the assistant level, \$6,000 (9%) less; and at the instructor level, \$2,900 (6%) less.

12. 10,4 (last sentence). State the name of the main professional organization for IO psychologists (do not abbreviate). The web site listed is an excellent resource, by the way. Long story, but SIOP is an independent organization but also Division 14 of the American Psychological Association. It is unusual that “divisions” are also independent of APA.
13. Turn to 17,4 and page 18, Table 1.5. Not for the exam. The name of the premier journal for IO psychology is the *Journal of Applied Psychology*. Note the interesting name – the journal is devoted solely to IO psychology even though the name of the journal is *Journal of Applied Psychology*.

Also, look at Table 1.2 (page 6), you will see that this journal was first published in 1917. The first person who received a degree in IO psychology was awarded the degree in 1921 - so you can see the field became a "codified" field around 1917-1920.

Again not for the exam, but notice in Table 1.5 that the *Journal of Organizational Behavior Management* is not listed.

Finally, and again, not for the exam: in 19,1-3, note the caution about the Internet!

14. Not in the text, but for the exam. Be able to state the percentage of psychologists that practice IO psychology. The answer: 4%

Not for the exam, but it is not a surprise that people don't know we exist (or that the field of OBM exists). 50% of APA's more than 96,000 psychologists are Clinical, Counseling, and School Psychologists.

Licensing of IO Psychologists and Credentialing of Behavior Analysts.

Dickinson credentialing ms in course pack.

15. Based on the material below, be able to state the main reason why many (including SIOP as an organization), maintain that IO psychologists should not have to be licensed. This is a controversial issue, often pitting IO psychology against state licensing boards.

Licensing was originally developed to protect the public in health care areas (mental health, behavioral health areas which basically deal with populations that are vulnerable). IO psychologists are not health providers and do not deal with vulnerable populations.

16. 4, 3. State the two main reasons for license laws for behavior analysts.
17. 5, 1-2. State two additional (different) reasons why some behavior analysts feel all behavior analysts should be licensed.
18. From lecture: State three reasons why many (most) people in OBM maintain that OBM (as well as many other applied fields in behavior analysis) should be excluded from licensing. These are also the reasons why most people in OBM are not certified either. Given that certification is voluntary, however, certification of behavior analysts is not controversial (except for the fact that it is making it very difficult for our students to get academic jobs – more on this in lecture). Licensing clearly is.
19. 5, 3 State the two main types of laws and describe each (who is covered).
20. 6,2-7,0 What is the current conundrum with respect to state license laws that cover all behavior analysts? Please note that some students had trouble with this study objective last year. If you have questions about it, please ask.

Some Major Differences Between traditional I/O Psychology and OBM. I am presenting this material because students often ask me what the difference is between traditional IO psychology and OBM. The information in these study objectives is based on the article by Bucklin et al. that I have included in the course pack. You do not have to read the article - I have included all of the information I want to learn in the study objectives. However, some of you may want to read the entire article. I have provided the page and paragraph numbers for the information I have asked you to learn, just so you can refer to the article for more detail should you want to do that.

To conduct the comparison, articles that were published in JOBM and JAP (Journal of Applied Psychology) between the years of 1987 and 1997 were analyzed and classified. I am only going to present some of the "highlights" of the results below. The article, unfortunately, is dated and it is time for an update.

21. 30,1 and 31,1. Not for the exam. There is no unifying theory underlying the field of I/O. In fact, there are dozens of different theoretical perspectives. There is one unifying theory for OBM: behavior analysis.

To get an idea of the number of different theories that exist, peruse the chapters on motivation and leadership in Aamdot. He presents at least 10 different motivational theories and 8 different leadership theories. And the motivational theories do NOT correspond to the leadership theories. Therefore, without delving very deeply, there are 18 different theoretical perspectives identified.

It is not very surprising, therefore that most of the research in IO psychology is designed to test hypotheses derived from the various theories (who is right, in other words?).

22. 48, Table 2. **For the exam:** Based on the material in this study objective: (a) Be able to rank order the top *three* areas of inquiry for I/O (you don't have to learn the top three for OBM), (b) and state of the top 12 topics addressed, how many were common to both I/O and OBM (you don't have to state what the three areas were).

The rank order of the top three topics that were addressed in articles in JAP and JOBIM follow.

Traditional I/O: 1. Selection and placement; 2. Statistical analysis procedures; 3. Performance appraisal.

For OBM: 1. Productivity and quality; 2. Customer satisfaction; 3. Training and Development. Note that there is no overlap in the top three areas.

In the top 12 topics addressed there were only **three** areas common to both I/O and OBM: Training and Development; Productivity and Quality; and Health/Safety.

23. 49,2. Experimental vs. Correlational research. Based on the material below be able to state the primary research strategy for OBM and for I/O.

In JOBIM, 95% of the research articles were experimental where at least one IV was manipulated. In JAP, 60% of the articles were correlational.

Thus, the primary research strategy, experimental manipulation versus correlational reflects a major distinction between the fields.

24. 49,3. Not for the exam, but interesting to know: Field vs. laboratory research. In JOBIM, about 80% of experimental research was conducted in field settings; In JAP, 80% of the experimental research was conducted in the lab. "Experimental" is defined as a study in which at least one IV was actually manipulated.

25. 51,2. Based on the following material, be able to state what percentage of research articles in JOBIM was designed to solve applied problems and what percentage in JAP was designed to solve applied problems.

In JOBIM, about 45% of the research articles were designed to solve an organizational problem; in JAP, only about 5%! (Note I rounded these percentages to make them easier for you to learn.)

26. From the information in the two preceding study objectives, you can certainly argue that OBM has much more of an applied focus while I/O has much more of a theoretical focus.

Based on the material below, state and explain the two main reasons why I/O research tends to be theory-driven and conducted in laboratory settings.

I/O research tends to be theory-driven and conducted in laboratory settings for two main reasons: (1) the fact that there is no unifying theory in I/O and thus much of the research is focused on testing hypotheses derived from a particular theory and comparisons of the validity of various theories; and (2) a tradition of adherence to rigorous experimental methodology and between group designs *coupled* with a rejection/ignorance of within-subject designs as legitimate experimental methodology (because of the small N and reliance on visual analyses).

Not for the exam: In the 8 IO texts I reviewed last summer, not one mentioned or acknowledged the existence of SS research designs in their research section.

27. Why does strict adherence to between-group designs restrict research in applied settings *in contrast* to within-subject designs that are commonly adopted by behavioral psychologists. You must mention both types of research designs in your answer. (See page 57,1 for a discussion of this.)

1. Between-group designs are usually not feasible in applied settings because participants must be randomly assigned to experimental groups.

Companies are not willing and are usually unable to randomly assign employees to the experimental conditions. Because of this, most of the research gets conducted in the lab where such designs can be done. Thus in I/O psychology, research directed at applied issues/topics often takes the form of laboratory simulations.

2. Within-subject designs do not require random assignment of participants to conditions, hence, can be much more easily implemented in work settings.

28. 55,1-56,0 and Table 3 on page 56.

A. Bucklin et al. identified the top 9 IVs that were examined by both JAP and JOBM researchers. Of those, how many were the same? Seven

The following is not for the exam but they consisted of: (a) Antecedents/Information; (b) feedback; (c) training; (d) goals; (e) monetary consequences; (f) non-monetary consequences; (g) and praise.

B. Describe the major differences between the IVs examined in JAP and JOBM.

The main IV in I/O research is antecedent/information - traditional I/O researchers rarely manipulate consequences.

In OBM, (a) antecedents are rarely manipulated alone, (b) consequences are manipulated more often, and (c) "package" interventions (i.e., task clarification, checklists/job aids, goals, feedback, and rewards) are much more frequently used.

29. In OBM, package interventions are often used in applied settings but not in laboratory studies.

Explain why, based on the material below and referring to the objectives of the two types of research.

In applied settings, it is important to get changes in performance as quickly as possible – delays can have adverse affect on profits and critical business outcomes. In contrast, lab research has a very different focus – lab research is designed to partial out the effects of various IVs.

This next part will not be for the exam. It makes sense that most OBM interventions in business and other applied settings are multi-component interventions. The following four review studies (including one that reviewed interventions in human service settings) have all reported that multi-component interventions are more effective than single-component interventions: Balcazar, F., Hopkins, B. L., & Suarez, Y. (1985/1986). A critical, objective review of performance feedback. *Journal of Organizational Behavior Management*, 7(3/4), 65-89; Alvero, A., M., Bucklin, B. R., & Austin, J. (2001). An

objective review of the effectiveness and essential characteristics of feedback in organizational settings (1985-1998). *Journal of Organizational Behavior Management*, 21(1), 3-29; Stajkovic, A. D., & Luthans, F. (2003). Behavioral management and task performance in organizations. *Personnel Psychology*, 56, 155-194; Reid, D. H., O'Kane, N. P., & Macurik, K. M. (2011). Staff training and management. In W. W. Fischer, C. C. Piazza, & H. S. Roane (Eds.), *Handbook of applied behavior analysis* (pp. 281-294). NY: The Guilford Press.

30. 59,1. One of the weaknesses in OBM in comparison to traditional I/O is the extent to which we assess social validity. Social validity was assessed in 51% of all I/O field studies, whereas it was assessed in only 27% of OBM field studies – this, in spite of the fact that OBM researchers conducted a much higher percentage of field studies. These data have not changed much: Only 20% of the articles in a review of studies published during the last decade in *JOBM* (VanStelle et al., 2012) assessed social validity.

FOR THE EXAM: Learn the following reasons why it is important to assess social validity.

(a) If current clients are satisfied with the interventions, they are more likely to continue them. (b) It could increase acceptance of our behavioral interventions in business and industry in general (assuming of course that the data indicate that employees and management are satisfied), and (c) it could mitigate complaints that our interventions/technology is manipulative and coercive (ethical issues that have been raised by traditional I/O psychologists).

Dickinson article

31. 10,1 When did the first signs of OBM become visible?
32. 18,1. Name the individual who is responsible for "programmed instruction."
33. 19,1 What area within the field was the first organized application of behavioral principles in the work place?
34. 19,2 Not for the exam, but notice the name of the authors who published what many consider to be the first applied article in the field of behavior analysis.

21, 0 Also, not for the exam, but according to Hopkins, who is the "father of behavior modification" and thus the "grandfather of OBM?"

An interesting aside - Many of you know or know of Jon Bailey, who is a faculty member at FSU. Bailey was an undergraduate student of Jack Michael's at Arizona State University, and later received his Ph.D. from the University of Kansas. His advisor was Mont Wolf who received his Ph.D. with Michael at ASU (Wolf also mentored Bailey at ASU). Bailey was the doctoral advisor of John Austin and Jim Carr. And, Dr. Dave Wilder at FIT was a Ph.D. student of Carr's. Unfortunately for the field, Bailey retired about 6 years ago. He is still, however, teaching at the FSU Panama City campus in an MA program that focuses on training individuals to work in human services.

35. 22,1. What was the name of the first professional organization devoted to the advancement of behavioral applications? When was it founded? What is the name of this association now? Give the full names of these organizations, not just their abbreviations.

36. Learn the following contributions that Brethower made to the field of OBM: "programmed instruction", "performance-based training", and "the development of behavioral systems analysis" along with Rummier.

For odd reasons, Brethower's contributions are not recognized nearly to the extent that they should be.

Not for the exam, but another interesting "family tree" - Brethower took his first undergraduate class in behavior analysis from Jack Michael at the University of Kansas, which was Michael's first academic job. Brethower received his MA degree from Harvard, where he studied with Skinner; then went to UM, where he received his Ph.D. He joined WMU in 1978. Dr. Brethower was my doctoral advisor at Western Michigan University.

37. Based on the material below explain how programmed instruction led to performance-based training which led to the development of behavioral systems analysis.

Experts in programmed instruction realized that they could get individuals to learn the material, however, they came to realize that often that training did not transfer to the job. Hence, the development of performance-based training which means that training is evaluated not only by whether or not trainees learned the material, but whether the training improved performance on the job. Then, they realized that even if trainees improved their job performance, the improved job performance still might not affect critical business drivers (results). Hence, the advent of behavioral systems analysis that examines not only the individual's job, but also the work processes (how the work gets done) and organizational level measures of success.

38. 22-26. This section explains why the works of Brethower, Rummier, and Gilbert are so similar. However, there is far too much detail for you to learn. Based on the following summary, be able to explain why their works are so similar.

Brethower and Rummier developed behavioral systems analysis while they were graduate students at the University of Michigan in the 1960s. Gilbert was invited to teach some of the training workshops at UM, and then later Rummier and Gilbert formed one of the first behaviorally oriented consulting firms together.

Not for the exam: Brethower and Rummier remained good friends their entire lives. Brethower and his wife built a house in AZ about 25 miles from where the Rummiers lived, and retired there. Tragically, Rummier died suddenly in 2007.

39. 28,0. State the name of the very influential book written by Gilbert and the date it was published. People in OBM still refer to this book all the time – you should get a copy and read it. In lecture I will talk a bit about why this book was so important, although I won't require you to know that for the exam.

The following is not for the exam: Recently, years after Tom Gilbert's death, his wife, Marilyn, came across his unfinished autobiography. Aubrey Daniels International published it in 2011. What did Gilbert name the book? *Human Incompetence*.

40. 32-35. State the following three major accomplishments of Daniels with respect to the formation of OBM, or if I list one of these accomplishments, be able to give Daniels' name: (a) Formed one of the first major OBM consulting firms (specifically, BSI); (b) Was the first editor of the *Journal of Organizational Behavior Management* (in 1977); (c) Published one of the first OBM books in 1982, called *R+ Performance Management* - written for supervisors and managers. (We still use a newer version of this book in our undergraduate class on PM.)
41. 34,1. Where did the name for our field come from?
42. A. 37,1 What university was the first to offer OBM and behavioral systems analysis?
B. 37,1. State the name of the faculty member who was responsible for the systems analysis training program at WMU.
43. 45,1 .
A. According to Dickinson, how do early events in traditional management fields such as I/O psychology, organizational behavior and management science relate to the development of OBM? In other words, what type of precursors were they and what type weren't they? Where did the field of OBM emanate from?
B. Also, explain why she arrived at the conclusion that the field of OBM developed in relative isolation from I/O and emanated primarily from programmed instruction and behavioral applications in other areas. Students have had trouble with this, so let me help: *The individuals who most influenced and pioneered the field, such as Aubrey Daniels, Dale Brethower, Tom Gilbert, etc., came from other areas in behavior analysis, not from I/O or management fields.* (Not for the exam, but note that there are exceptions: for example, Ed Feeney, Tom Mawhinney, and Fred Luthans.)

THE END

Unit 2: Traditional Performance Appraisal, Performance Measurement, Performance Assessment, and Task Clarification

Reading Assignment

Aamodt, Chapter 7

The following articles in the course pack:

1. Daniels, A. C., & Bailey, J. S. (2014). Chapter 7: Measurement Tools: Necessary but not sufficient for behavior change. *Performance Management, 5th edition* (pp. 71-95). Atlanta, GA: Performance Management Publications.
2. Pampino, R. N., Jr., Heering, P. W., Wilder, D. A., Barton, C. G., & Burson, L. M. (2003). The use of the performance diagnostic checklist to guide intervention selection in an independently owned coffee shop. *Journal of Organizational Behavior Management, 23* (2/3), 5-19.
3. Anderson, D. C., Crowell, C. R., Hantula, D., & Siroky, L. M. (1988). Task clarification and individual performance posting for improving cleaning in a student-managed university bar. *Journal of Organizational Behavior Management, 9*(2), 73-90.
4. Komaki, J. L. (1986). Toward effective supervision: An operant analysis and comparison for managers at work. *Journal of Applied Psychology, 71*(2), 270-279.

Recommended Readings: Not required and not in the course pack

5. Systems analysis translated into performance improvement
Abernathy, W. B. (2010). A comprehensive performance analysis and improvement method. *Performance Improvement, 49*(5), 5-17.
This is an amazing article about how to do a systems analysis and translate the analysis into performance improvement. You should read everything that Bill Abernathy writes.
6. Operant leadership applied to teams
Komaki, J. L., Desselles, M. L., & Bowman, E. D. (1989). Definitely not a breeze: Extending an operant model of effective supervision to teams. *Journal of Applied Psychology, 74*(3), 522-529.
This is one of my all-time favorites – an applied article done with captains in an actual sailboat regatta. It extends Komaki's work in the article above to teams.
7. Operant leadership model: research, assessment of skills, and training leadership skills
Komaki, J., L., Minnich, M. L. R., Grotto, A. R., Weinshank, B., & Kern, M. J. (2011). Promoting critical operant-based leadership while decreasing ubiquitous directives and exhortations. *Journal of Organizational Behavior Management, 31*(4), 236-259.
This is an exceptional article. It's one of the very few in our field that summarizes all of the research on her operant leadership model and presents a training study that developed leadership skills in actual managers. This should be required reading, but I chose to use her earlier article that provides more of a detailed description of her actual model and leadership assessment tool.
8. Example of Gilbert's Behavioral Engineering Model to assess and improve performance
LaFleur, T., & Hyten, C. (1995). Improving the quality of hotel banquet staff performance. *Journal of Organizational Behavior Management, 15*(1/2), 69-93.

9. Example of Daniels' PIC/NIC assessment

Doll, J., Livesey, J., McHaffie, E., Ludwig, T. D. (2007). Keeping an uphill edge: Managing cleaning behaviors at a ski shop. *Journal of Organizational Behavior Management*, 27(3), 41-60.

This is an excellent example of Daniels' PIC/NIC as an assessment instrument. It also examines task clarification, and once again indicates that task clarification alone increases performance moderately, and that further increases can be obtained if feedback is combined with task clarification.

10. No data re the effectiveness of different diagnostic tools

Johnson, D. A., Casella, S. E., McGee, H., & Lee, S. C. (2014). The use and validation of preintervention diagnostic tools in Organizational Behavior Management. *Journal of Organizational Behavior Management*, 34(2), 104-121.

Some Major Take-Home Points: Unit 2
(or perhaps, the World According to Dickinson)

These are not for the exam, but they do explain my choice of articles

1. Different traditional performance appraisal systems all have advantages and disadvantages; none is better than any other overall.
2. In the absence of more behaviorally based measurement systems, annual performance appraisals are a necessary "evil" for administrative purposes, but have little effect on employee performance. It's not the type of performance appraisal form or system that is the problem; rather, it's the (a) *annual* evaluation combined with the (b) *subjectiveness* of the evaluation that causes problems.
3. There are several different behavioral assessment tools/instruments in OBM; most are descriptive, not functional, in nature. None has been shown to be better than the others.
4. Task clarification has been examined extensively and there are dozens of studies.
 - A. Task clarification increases performance in most cases, however, only modestly.
 - B. When task clarification is combined with feedback, the effects are much better.
 - C. When task clarification is combined with feedback and goal-setting, again the effects are much better. Goal-setting may increase the effectiveness of both feedback and task clarification by providing an "evaluative" component. More on this later in the course.
 - D. When task clarification is combined with feedback and some type of praise or tangible rewards, the effects are even better than when it is simply combined with feedback. Again, this is not surprising because when feedback is combined with either (a) some type of evaluative component or (b) tangible rewards, its effects are greatly enhanced as well. Again, there will be more on this in Unit 6.
 - E. None of the above should be *any* surprise to behavior analysts. Task clarification is an antecedent intervention. It's not clear whether feedback functions primarily as a consequence or antecedent; probably both in many situations, but it could be either one in any specific situation. It is clear, however, that any type of tangible rewards are consequences and that evaluation is also a consequence, or depending upon the type of evaluative component, at least implies consequences will be forthcoming, and thus we

would expect both rewards and evaluation to have greater effects than task clarification or any other antecedent intervention.

Finally, the study objectives!

Aamdot, Chapter 7, Traditional Performance Appraisal

1. 235,1. Explain, giving specific examples of types of performance appraisal systems, why it is important that you determine why the organization wants to evaluate employee performance.
2. 237,1 and ppt. When a particular employee is being evaluated, why is it that there may be little agreement between the supervisor's rating and ratings by peers, the person's subordinates, and the person's customers?
3. A. 238,3 and ppt. In general and when peers are similar and well acquainted with the person being rated how reliable and valid are they (how well do they predict future success)?
B. 238,4 (next to the last sentence) and ppt. However, what does the research indicate about how individuals react to feedback from peers? (include the type of feedback as well as the comparison with experts and supervisors).
4. Learn the following: The most serious obstacle in using peer assessments/evaluations *is that employees do not like them and object to doing them* (Muchinsky, 2010).

None of the rest of the material in this study objective will be on the exam: Our university provides a very nice example of this type of obstacle. For many years, the faculty participated in a peer assessment merit evaluation procedure. The union did not want the system because of the divisiveness it would create among faculty but the administration insisted. About ten or so years ago, the union got its way, and faculty merit based on peer assessment was eliminated. Now, all of the merit money (when there is merit money available which has not been the case for the past seven years or so) is awarded by the administration (chairs and deans). Note that this is an odd thing - the administration originally insisted on giving a certain proportion of merit money to the faculty to award. The faculty protested the peer assessment, and was willing to give the administration total control of merit increases to be rid of that type of performance appraisal procedure. Then, of course, the union and faculty protested that they did not know the criteria that were being used by the administration when awarding merit money - sometimes it really is the case that the administration can't win.

Another interesting note. While the Department of Psychology developed a rather good procedure for doing peer assessments, faculty in many other departments refused - and simply split the available merit money equally among all faculty in the department.

Now, while you are thinking about how strange this is, consider how you would feel if you were asked to assess the performance of the other students who are studying with your advisor, or the other students in your degree program. Further, assume that the peer assessments would influence whether or not students received financial aid and how much financial aid they received. Would you embrace such a system or not? Why or why not?

5. 239,1-2
A. Not surprisingly, why can subordinate ratings be difficult to obtain?

B. Feedback from which of the following sources resulted in the most performance change?
 (a) supervisors, (b) peers, (c) subordinates (same thing as direct reports)

Not for the exam: Many organizations do use 360 degree feedback to provide managers with "motivation" to change. But, as indicated by Aamodt, it has to be done very carefully.

Imagine your reaction to something like this if you discovered that your subordinates and/or peers did not rate your performance as well as you thought you were doing - it could be devastating at worst, and disconcerting at best. So you need to "debrief" (counsel) managers about the results and provide them with a course of action on how to improve. As Aamodt indicates, the feedback from this type of appraisal is best done by someone other than the person's direct supervisor, and really should be restricted to employee development, not evaluation purposes.

6. 240,1.

A. Not surprisingly, what is the main problem with self-assessments?

B. How do self-appraisals correlate with (1) actual performance, (2) subordinate ratings, and (3) supervisor ratings?

C. Note that there is little agreement between self-assessments and supervisory assessments. What are the very important implications of this difference, from a behavioral perspective? (Answer: *Given that self-assessments do not agree with supervisory assessments and individuals rate themselves higher, employees are not going to believe that the rewards they receive are truly contingent upon their performance. Clearly, from a behavioral perspective, that is likely to lead to performance problems because people are going to believe that they are not getting the rewards they deserve, not to mention strained relations between supervisors and employees.*)

7. 241,1-251,1. Not for the exam, but Aamodt does an excellent job in describing and explaining the various types of performance appraisal instruments. Remember this if you ever need to look up something about different types of performance appraisal instruments.

8. 243,6. Why do employers use employee comparisons rather than rating scales?

9. 245,3-246,0 and ppt. Describe and explain the major drawback with forced distribution performance appraisals (don't just say "unfairness" as in 245,2- explain why these are often/usually considered to be "unfair").

Not for the exam: As Aamodt states, more than 20% of Fortune 1000 companies use forced distribution systems. However, there have been some very public lawsuits over the use of these type of systems because of the extent to which underrepresented groups tend to be disproportionately ranked in the low category. As a result both Ford and Goodyear (targets of the lawsuits) have stopped using them (Levi, 2012). So, be careful with these.

Also, you might find the two articles at the end of the study objectives interesting. In 2013, Yahoo's new CEO implemented a new appraisal system that requires managers to rank workers on a curve. The second article, published in the New York Times in Feb. 2016, discusses the fall-out that has caused.

10. 246,2. What is the greatest problem with employee comparison methods?

11. 248,5. State and define/explain the two types of rating errors that are the main problems with graphic rating scales. Halo is defined on page 259, 5, 1st sentence and leniency is defined on page 259,2.
12. 248,6-249,1. Based on the following material, state the reasons why behavioral checklists should not be seen as “behavioral” (as in behavior analysis) method of performance appraisal.

Behavioral checklists are often referred to as a “behavioral” (as in behavior analysis) performance appraisal system because they are based on observable behaviors. And many in OBM recommend their use. However, they should not be seen as an acceptable way to measure performance from a behavioral perspective unless we have no other choice.

Why? Because behavioral measures rely on (a) the **objective** measurement of behavior/performance, not subjective judgment by the supervisor (b) **over time as it occurs on the job**, not an assessment that occurs just once or twice a year.

When we get to the Daniel’s material, you will see that he recommends a behaviorally-anchored rating scale if an organization must rely on subjective judgment, but then qualifies that by stating that such an appraisal system can be gradually moved to a better one.

13. 251,2. What does the research indicate about the superiority of “complicated,” more “sophisticated” methods of performance appraisal when compared to inexpensive and uncomplicated rating scales?
14. 252, 4. The material on the legal issues surrounding performance appraisals is very important, but I don’t want to ask you to memorize all of the factors that increase the likelihood of surviving a legal challenge. But if you are ever in a position to develop a performance appraisal system, you should note these factors very, very well and use them as a checklist to determine the adequacy of your system. Lawsuits can cost companies millions and millions of dollars.
15. 254,0. What are conservative courts likely to base their decisions on? What are liberal courts more likely to base their decisions on?

Not for the exam: In the US, there are 92 district courts, eleven courts of appeals corresponding to eleven “circuits” (composed of several districts), and then at the top, the Supreme Court. Not surprisingly, just like politics, in various parts of the country courts are more conservative than in other parts of the country. The Fourth Circuit (which includes North and South Carolina, Virginia and West Virginia) has historically been one of the most conservative circuits while the Ninth Circuit (which includes California, Alaska, and Hawaii) has historically been the most liberal circuit in the country.

Daniels chapter: I am including this primarily so you have some examples of checklists and the performance matrix. I realize that many of you have read this chapter before.

16. 71, 3
 - A. Why do problems arise when we start to measure what people do in organizations? Hint - the answer is in the sentence that begins "These comments indicate..."
 - B. Explain, based on the material below, why people may resist measurement even if measures are stated positively.

I completely agree with Daniels and Bailey that measures that are stated “positively” are more likely to be associated with reinforcement than with punishment. However, it is also important to keep in mind that many people still resist measurement if measures are stated positively. Based on the material below, explain why Dickinson maintains that people will resist measurement **even** if what is measured is positive.

The key to understanding resistance is in the consequences, not whether measures are stated positively or negatively. No matter whether the measures are stated positively or negatively, if supervisors/managers respond to them by criticizing employees, (which is typical), employees will resist measurement. So even if you measure positive things, individuals are still likely to resist measurement.

Students are sometimes surprised at the resistance they encounter when attempting to implement a feedback/reward program in business and industry. The resistance is perfectly understandable, and it is important that you remember this when you go to intervene.

17. 74-79 and Figure 7.1, page 78. Not for the exam, but note the four categories of measures that should be considered when developing measures for any position (Quality, Quantity, Timeliness and Cost).
18. Again, not for the exam, but note carefully the material on pages 84-90: Measurement Tools – they offer examples of some very nice ways to measure behavior. The checklist provided in Figure 7.5 on page 86 is an **excellent** checklist for motel/hotel housekeeping staff and provides an example that can be adapted for ANY type of “housekeeping” – in a manufacturing plant, cleaning up at the end of the shift; in a bar, cleaning and stocking items before the end of a shift, etc. And, although in this example, points are assigned to each and every task, a checklist does not have to be this detailed to be effective. A simple list of tasks, with percentage completed, usually works just fine.
19. 90-92, The Performance Matrix. If given a sample Performance matrix like the one in Figure 7.9, be able to state what each number means, what the circled numbers refer to, and, given the weight, how to determine the points. Or if I give you this matrix or a similar one, be able to indicate performance on the matrix, and determine the total points. *For some reason, students have had some problems with doing this on the exam. So study this carefully.*

Note that "current performance" is listed as a "5" on the matrix. The term "current performance" has confused students in the past. In this case, "current performance" refers to baseline, historical performance. Use the term baseline when referring to this column. When a person is evaluated, his/her actual "current" performance is written in the raw score column, and then the number in the row that corresponds to it is circled on the matrix. For example, on page 91, the "Accountability results: May" are provided at the bottom of the page and in the **Raw Score** column on the Performance Matrix in Figure 7.9.

The performance matrix is an excellent tool. Abernathy also used it in all of work with incentive systems, in a slightly different format, referring to it as the Balanced Score Card or more recently, the Performance Scorecard.

Not for the exam, but to see an example of the use of the Performance Matrix, see Eikenhout, N., & Austin, J. (2005). Using goals, feedback, reinforcement, and a performance

matrix to improve customer service in a large department store. *Journal of Organizational Behavior Management*, 24(3), 27-62.

20. 93,1. Why can collecting the data be as much problem as developing the measure? We often forget that both time and effort can function as punishers – this has been shown to be true in the operant laboratory with nonhuman animals as well. Be able to provide the following diagram:

R (measuring) → Sp (time and effort)

Now on to functional assessment....

From lecture:

21. There are three general types of functional assessment procedures based on how the assessment is conducted: informant, descriptive, and functional *analysis*. Learn these three types. After lecture, and be able to recognize and label examples of each.
22. Give the names of three functional assessment procedures that are currently popular in OBM today – as well as the names of the individuals who created them.

Pampino, Heering, Wilder, Barton, & Burson: Performance assessment & demonstration of a very effective component package consisting of task clarification, training, and consequence (public posting and a monthly lottery). They also assessed social validity – good for them!

23. 8,2. Based on study objective 23 above, what type of functional assessment was used: informant, descriptive, or analysis?
24. 8,4. Not for the exam, but note the multi-component intervention consisting of task clarification, training, and consequence (lottery). Recall from last week that most of the interventions in OBM are, indeed, multi-component. This particular combination has historically been shown to be a VERY effective combination.
25. 9,1.
- A. Describe the method used to **post** the number of lottery tickets won. Note that I am not asking for the how the employees earned the tickets. Rather, I want you to focus on the type of feedback display that was used. Be sure to contain all of the relevant aspects.
- B. Also, for the exam, what factors from a behavioral perspective might influence the extent to which a lottery like this is effective? (this is not in the article).

Not for the exam, but what do you think about identifying the employees by name on the data sheet that was publicly posted?

26. 11, Figure 11. In this study, which categories were identified as the top two categories that were possibly responsible for the low performance levels?

Not for the exam, these two areas/categories are likely to be the same in most organizations – Gilbert in his book *Human Competence* also identified these as the “usual suspects.” Just food for thought – this may explain why it really doesn’t matter which assessment procedure you use to identify the barriers to performance. Each and every one of them includes an analysis of these two factors.

Anderson, Crowell, Hantula, & Siroky: I am including this article primarily because it showed that task clarification alone resulted 21 of 30 participants showed only modest improvement in behavior while the addition of feedback resulted in much greater improvement. Again, you

should keep this in mind if you implement only task clarification – remember it is only an antecedent intervention, and by itself may not be very effective.

27. 79,2 Not for the exam, but again note that participation was voluntary and employees were told that the checklists would not be used to harass anyone or threaten their jobs. These are excellent HSIRB procedures.
28. 81,2. When task clarification was implemented, what was the overall improvement?
29. 81,2. After presenting the overall improvement of baseline the authors specify the percentage of participants in each group that improved performance. Why are these data important?
The latter answer is not in the text, so let me explain: These data are important because with group data you cannot tell how the intervention affected individuals. If the overall group average increases, and only group data are provided, you can't tell whether that increase was due to a large increase in performance by just 1-2 individuals, or whether most or all of the individuals improved their performance. Thus, the individual data tell you something about the generality across individuals – how likely is it that this type of intervention will affect most or all of the employees?
30. 84,1 At the end of the Feedback-3 phase, what was the *overall* average increase across *all* three groups? (in other words, don't memorize all three percentage increases; rather calculate the average of the three and memorize that one). I am having you learn this so you can compare this to the % for task clarification alone – from SO 30.

Komaki: I am including this article because it represents a way to assess the performance of supervisors and managers. Komaki and her colleagues are the only ones I know who have done research in this area. I had used this material in earlier 6450s but dropped it. But, three years ago, at ABAI, I went to a presentation by CLG and they were making extensive use of Komaki's work – so, I put it back in. ☺

31. Abstract. What were the two key differences between effective and ineffective managers?
32. 270,5 Why was performance monitoring believed to be important?
33. 271,1 State the two reasons why the author did **not** believe that antecedents such as instructions, reminders and training would discriminate between effective and ineffective supervisors?
34. 271, 5, Assumptions, point 1. Not for the exam but: note the emphasis on specificity. This again reflects our behavior analytic perspective - only if very specific behaviors/performances are identified, as opposed to general traits, can individuals be given a prescription on how to improve their performance. Here, the author is implicitly criticizing the leadership theories of trait theory. This criticism can also be extended to the more recent very popular Myers-Briggs assessment. See chapter 12 in Aamodt for examples.
35. 271, 5. Assumptions, point 5. Not for the exam. Here the author is implicitly criticizing leadership theories that maintain that the leader's effectiveness is highly dependent on the situation - such as leader-group relations, task structure, and position power. The most well-known is Fiedler's "contingency theory", followed by Path-goal theory. The Vroom-Yetton contingency theory focuses on "mutual influence" - so again, the author is criticizing this approach. Again, see chapter 12 in Aamodt for examples.
36. 274,1. Approximately what percentage of time did managers, as a group, spend dealing with the performance of others? Does this seem small to you? This is an important point. When

we intervene with supervisors and managers, it is very important to remember that they have many other responsibilities. Time management and the labor intensiveness of our interventions becomes a critical issue.

37. 275,1. In this study, what was **not** related to performance monitoring and what is the important implication of that? Implication: Although it is important that managers/supervisors have job knowledge, just because managers/supervisors are experts, it does not mean they will be good managers.
38. 275, 9. Not for the exam. Notice that there was no difference re the time spent providing consequences. In a subsequent study, Komaki and her colleagues found that providing consequences did make a difference *if* performance monitoring was adequate. Thus, in order for provision of consequences to matter, supervisors/managers must first monitor performance adequately. This does make conceptual sense!
39. 277, 1. Not for the exam. Note that Komaki stated that monitoring may function as an establishing operation. We will be looking at establishing operations in the next unit, and I will return to this analysis.

THE END - but see the following amusing quotes from actual performance evaluations and the article about Yahoo.

For your Entertainment Only

Quotes Taken from actual Performance Appraisals

1. Since my last report, this employee has reached rock bottom and has started to dig.
2. His men would follow him anywhere, but only out of morbid curiosity.
3. I would not allow this employee to breed.
4. This associate is really not so much of a has-been, but more of a definitely won't be.
5. Works well when under constant supervision and cornered like a rat in a trap.
6. When she opens her mouth, it seems that this is only to change whichever foot was previously in there.
7. He would be out of his depth in a parking lot puddle.
8. This young lady has delusions of adequacy.
9. He sets low personal standards and then consistently fails to achieve them.
10. This employee should go far - and the sooner he starts, the better.
11. This employee is depriving a village somewhere of an idiot.

Yahoo's Latest HR Disaster: Ranking Workers on a Curve

By Joshua Brustein November 12, 2013

From: Bloomberg Businessweek Technology

If Marissa Mayer is as good at identifying winning startups as she is at embracing contentious human resources practices, Yahoo! is going to be just fine. Several months after the great [work-at-home kerfuffle](#) of 2013, [Yahoo employees were up in arms](#) about a new policy that forces managers to rank employees on a bell curve, then fire those at the low end. According to AllThingsD, Marissa Mayer reportedly told Yahoo workers that the rankings weren't mandatory, but many people disagree. The company hasn't responded to a request for comment.

With its embrace of rankings, Yahoo has waded into the "[third rail of human resource management](#)." Forcing managers to rank their employees along a bell curve was popularized in the 1980s (thanks, Jack Welch), but lately it has fallen out of favor. The Institute of Corporate Productivity says the number of companies using either a forced ranking system or some softer facsimile is down significantly from previous years. Companies performing well were less likely to be using forced ranking systems than those that weren't. Just over 5 percent of high-performing companies used a forced ranking system in 2011, down from almost 20 percent two years earlier.

Basically, many people have lost faith that ranking employees works, and some research suggests that employee performance doesn't follow a bell curve at all. Instead, most people are [slightly worse than average](#) with a few superstars. And while a bit of pressure can motivate people, constantly pitting employees against one another is terrible for morale. In a company that is going through layoffs, [this gets worse over time](#) wrote several MIT professors in a study of forced rankings in 2006. "As the company shrinks, the rigid distribution of the bell-curve forces managers to label a high performer as a mediocre. A high performer, unmotivated by such artificial demotion, behaves like a mediocre."

This can have a particularly bad impact on innovation, arguably the thing Yahoo most needs now. When employees worry about being ranked at the bottom of the pile, they take fewer risks, said Cliff Stevenson, who studies workforce issues for i4cp.

However, rankings also suggest increased data about employees, which plays into Silicon Valley's weakness for hard numbers. In Stevenson's study, tech companies were over three times as likely to implement a forced ranking system than the respondents overall—although he cautioned that the sample size was too small to make any authoritative declarations.

The continued appeal is largely that rankings appear to take the "human" out of human resources. Rigidly formatted evaluations generate a stockpile of crunchable information that can be used to run various types of systematic analyses. Even this will work only if the seemingly objective information is valid. Stevenson has his doubts.

"Inherently the problem in ranking is that, unless it's based purely on objective data—which you rarely see outside of a call center, it brings in a human element. There's no way to data-fy that," says Stevenson. In other words, managers' prejudices and stray opinions get transformed and codified in what appears to be raw data. This seems to be one of the specific complaints being made by Yahoo employees: The rankings are both high-stakes and completely arbitrary.

[As the techies say](#), garbage in, garbage out.

A Yahoo Employee-Ranking System Favored by Marissa Mayer is Challenged

Vindu Goel, The New York Times, Feb. 1, 2016

One of Marissa Mayer's signature policies as chief executive of Yahoo has been the quarterly performance review, in which every employee at the company is ranked on a scale of 1 to 5. The ratings have been used to fire hundreds of employees since Ms. Mayer joined the company in mid-2012.

Now, as Ms. Mayer prepares to announce a streamlining plan on Tuesday that is likely to involve even more job cuts, one former manager who lost his job is challenging the entire system as discriminatory and a violation of federal and California laws governing mass layoffs.

In a lawsuit filed in Federal District Court in San Jose, Calif., on Monday, Gregory Anderson, an editor who oversaw Yahoo's autos, homes, shopping, small business and travel sites in Sunnyvale, Calif., until he was fired in November 2014, alleges that the company's senior managers routinely manipulated the rating system to fire hundreds of people without just cause to achieve the company's financial goals.

Mr. Anderson said the cuts, including what his boss said was the firing of about 600 other low-performing Yahoo employees at the time of his termination, amounted to illegal mass layoffs.

Under California law, the layoff of more than 50 employees within 30 days at a single location like Yahoo's Sunnyvale headquarters requires an employer to give workers 60 days of advance notice. A similar federal law, known as the Worker Adjustment and Retraining Notification Act, requires advance notice for a layoff of 500 or more employees.

Yahoo has never provided such notices. But it did cut 1,100 employees over a period of months in late 2014 and early 2015, ostensibly for performance reasons.

If the court finds that Yahoo violated either law, it could be forced to pay each affected employee \$500 a day plus back pay and benefits for each day of advance notice it failed to provide.

The California Department of Fair Employment and Housing is also investigating the use of ratings in the firing of another Yahoo employee, according to Jon R. Parsons, Mr. Anderson's lawyer.

Fahizah Alim, a spokeswoman for the California agency, confirmed that such an inquiry was underway, but said she could not provide further information because of confidentiality rules.

In a statement, Yahoo defended its rating system. "Our performance review process also allows for high performers to engage in increasingly larger opportunities at our company, as well as for low performers to be transitioned out," the company said.

Yahoo also said that Mr. Anderson's specific claims had no merit and that he had sought a \$5 million settlement from the company just before filing the suit.

Ms. Mayer has steadfastly refused to use the word "layoff" to describe the thousands of jobs eliminated since she joined the company. She even forbade her managers from uttering what she called "the L-word," instructing them to use the term "remix" instead.

The lawsuit comes as Yahoo morale hits new lows. More than one-third of the company's work force has left voluntarily or involuntarily over the last year.

Ms. Mayer, who has presided over a continued decline in Yahoo's financial performance, faces pressure from activist investors to sell the company's Internet businesses or otherwise radically restructure the business. She has promised to unveil a new strategy on Tuesday, when Yahoo reports its financial results for the fourth quarter of 2015, although people with knowledge of her thinking say that the changes she will announce will be modest.

Mr. Anderson's suit provides a peek inside Yahoo's controversial quarterly performance review system, which Ms. Mayer adopted on the recommendation of McKinsey & Company, a management consulting company. Similar systems were once widely used in corporate America, and companies like Amazon.com still employ analogous methods.

But others, like General Electric and Microsoft, have dropped such rankings as a tool for routine firings because of their corrosive effect on productivity and employee morale.

At Yahoo, the program, known internally as Q.P.R., has been a sore spot among managers and employees since it began. The court filing said that managers were forced to give poor rankings to a certain percentage of their team, regardless of actual performance. Ratings given by front-line managers were arbitrarily changed by higher-level executives who often had no direct knowledge of the employee's work. And employees were never told their exact rating and had no effective avenue of appeal.

"The Q.P.R. process was opaque and the employees did not know who was making the final decisions, what numbers were being assigned by whom along the way, or why those numbers were being changed," the lawsuit says. "This manipulation of the Q.P.R. process permitted employment decisions, including terminations, to be made on the basis of personal biases and stereotyping."

Mr. Anderson said that in his case, he had received high ratings and a promotion before taking a leave of absence in the summer of 2014 to study at the University of Michigan on a Knight-Wallace Fellowship. Although the fellowship leave was approved by two top Yahoo executives, Kathy Savitt and Jackie Reses, who have since left the company, Mr. Anderson said that his boss's boss, Megan Liberman, called him on Nov. 10 to inform him that he was in the bottom 5 percent of the company's work force, all of whom were being fired.

In the suit, Mr. Anderson said he was fired for several reasons unrelated to performance. He said he had complained to management about the impact of the Q.P.R. process on the people he supervised and had reported an attempted bribe by one employee who wanted him to reduce another employee's rating.

He also alleged gender discrimination, claiming that the media group, which was overseen by Ms. Savitt and Ms. Liberman, systematically favored women in hiring, promotions and layoffs.

Mr. Anderson, who had worked at Yahoo's headquarters, said he was "stranded" in Michigan with his family because of the firing.

Unit 3: Work Motivation from a Traditional and Behavioral Perspective

Unit assignment

1. Dickinson's paper on Motivating Operations in Unit 3 of the course pack
3. Aamodt, Chapter 9: Traditional motivational theories

Recommended Reading: Not in course pack (all review, discussion articles):

Lotfizadeb, A. D., Edwards, T. L., & Poling, A. (2014). Motivating operations in the *Journal of Organizational Behavior Management*: Review and discussion of relevant articles. *Journal of Organizational Behavior Management*, 34(2), 69-103.

Olson, R., Laraway, S., & Austin, J. (2001). Unconditioned and conditioned establishing operations in Organizational Behavior Management. *Journal of Organizational Behavior Management*, 21(2), 7-35.

Agnew, J. L. (1998). The establishing operation in Organizational Behavior Management. *Journal of Organizational Behavior Management*, 18(1), 7-19.

Motivation from a behavioral perspective:

The motivating operation (previously called “establishing operation”) is the motivating variable in behavior analysis. We have not made much practical use of the MO in OBM, for reasons that are discussed in my summary of the MO; namely, we have been very successful in changing work performance (a) by changing antecedents and consequences, (b) most of the consequences we use in OBM are generalized conditioned reinforcers, and (c) and most of the behavior we are dealing with is rule-governed rather than contingency-shaped.

Nonetheless, the MO is a very important concept and is often used when analyzing the behavior of workers. Thus, it is important that you understand this concept. One year, I tried to teach the class without it, and found that it “just didn't work”.

The papers I have recommended provide thoughtful analyses of the potential use of the concept of the EO/MO in OBM. At the current time, however, in spite of the usefulness of this concept in other areas in behavior analysis, it is not clear how useful the concept is or will become in OBM, which is why I did not include the articles in your course pack. Interestingly, I have been saying this for years, and the most recent Lotfizadeb et al. article makes the same point.

Dickinson's paper

1. 2,2-4.
 - A. Provide two reasons why applied behavior analysts have been successful even though they have ignored the motivating operations of deprivation, satiation and aversive stimulation. This is true for OBM.
 - B. Explain carefully why generalized conditioned reinforcers can be used successfully to alter behavior without manipulating motivating operations. **2,3-4.**
2. 5,4. State the name of the two **main** effects that MOs have and describe them.
3. 9, Table 2. Be able to state the reinforcer establishing effect and the evocative effect for the MOs listed in this table. On the exam, I may ask, for example:

What is the reinforcer establishing effect of becoming too warm?

What is the reinforcer establishing effect of an increase in pain?

What is the evocative effect of sleep deprivation?

What is the evocative effect of salt ingestion?

Note carefully, that in the first two questions, you should only state the “reinforcer establishing effect” (not the evocative effect) and in the last two questions you should only state the “evocative effect” (not the reinforcer establishing effect). Although these effects do occur simultaneously, they are very different effects.

There are a few different ways to answer the above questions correctly. In lecture, I will use slightly different ways to say the same thing – students sometimes benefit from my “saying the same thing in different ways.” That said, however, let me give you some language, or what we call “verbal frames” for the above answers that will perhaps make this easier for you:

Reinforcer Establishing Effect:

The MO makes what specific consequence *more* reinforcing.

Evocative Effect:

The MO *evokes* behaviors that have resulted in what specific consequence in the past.

On the exam, for the evocative effect, it is also OK to list specific behaviors that may be evoked as follows: The MO would evoke what specific examples of behaviors.

4. 9, Table 3. Be able to state the reinforcer abolishing effect and the abative effect for the MOs listed in this table. On the exam, I may ask, for example:

What is the reinforcer abolishing effect of water satiation?

What is the reinforcer abolishing effect of becoming warmer?

What is the abative effect of a *decrease* in pain or *no pain*?

What is the abative effect of activity?

Again, note very carefully that in the first two questions you should only state the “reinforcer abolishing effect” (not the abative effect) and in the last two questions you should only state the “abative effect” (not the reinforcer abolishing effect).

To help you out, I am going to give you verbal frames that you can use to answer these types of questions.

Reinforcer Abolishing Effect:

The MO makes what specific consequence *less* reinforcing.

Abative Effect:

The MO *suppresses* behaviors that have resulted in what specific consequence in the past.

On the exam, for the abative effect, it is also OK to list specific behaviors that may be suppressed as follows: The MO would suppress what specific examples of behaviors.

5. 10, first 2 paragraphs in the Section “Confusion with SDs.” Why are MOs most commonly confused with SDs? In other words, how are they similar? What is the main difference between SDs and MOs? (You do not have to learn the diagrams on page 11. I have provided these simply to help you understand the difference between MOs and SDs.)
6. 12. Not for the exam, but note that I explain that an MO not only affects the reinforcing value of an unconditioned reinforcer but also affects the reinforcing value of any and all conditioned reinforcers that have been paired with that unconditioned reinforcer. I give some examples on pages 13-15. The effects that an MO have on conditioned and generalized conditioned reinforcers are often the ones that “come into play” in a business or organizational setting. I am not going to ask any questions over this material, but you should be aware of this.

Also when an MO affects a conditioned reinforcer rather than an unconditioned reinforcer, the MO is, technically, a “*conditioned* motivating operation.” When an MO affects an unconditioned reinforcer it is, technically, an “*unconditioned* motivating operation.”

7. I am not going to ask any questions over the rest of the material in this article – we don’t have enough time to go into all of the complexities of MOs in this class.
8. Now, let’s consider some possible MOs in the workplace. *Learn these three examples.* Be forewarned – students often have trouble with these, so study them carefully.

A. Feedback.

Assume: R (making widgets) → Sc (sight of completed widget).

The sight of the completed widget is NOT reinforcing.

Now Assume: MO (Feedback): R (making widgets) → Sr (sight of completed widgets)

Feedback may make the sight of the completed widget more reinforcing and evoke making widgets.

For the exam: I may ask (a) in the example I gave in the study objectives about feedback, what is the evocative effect of feedback or (b) what is the reinforcing establishing effect?

Also for the exam be able to explain why, in this example, the feedback cannot be an SD. Note that the sight of the completed widgets was available before the feedback, but it was not reinforcing; hence the feedback cannot be an SD because the sight of the completed widgets is not differentially correlated with the feedback – that is, the sight of the completed widgets is available whether or not feedback is present as an antecedent stimulus.

B. Irritation or anger at the supervisor.

Assume: R (work not getting done as quickly or as well as usual) → Sc (signs of distress by supervisor)

Signs (stimuli associated with distress, such as frowning, yelling, etc.) by the supervisor are NOT reinforcing to begin with, and may even be punishing.

Now assume: MO (anger, irritation): R (sabotage, work slow down) → Sr (signs of distress by supervisor)

When you are not “angry” at the supervisor, signs of distress on the part of the supervisor are not reinforcing. Once you are “angry” at the supervisor, then signs of distress become reinforcing and behaviors that produce those signs of distress will be evoked.

For the exam: I may ask in the example I had on the study objectives about the MO of anger/irritation at the supervisor, (a) what is the evocative effect or (b) what is the reinforcing establishing effect.

Also, for the exam be able to explain why “anger, irritation” cannot be an SD. Once again, note that signs of distress on the part of the supervisor was available when you were not angry or irritated, but it was not reinforcing - hence the anger/irritation cannot be an SD.

C. Work sampling (objective measurement of performance – from Komaki in U2).

Assume: R (working) → Sc (supervisor praises or criticizes).

However, the supervisor’s praise and criticism are not very reinforcing or punishing because he really does not understand what you do and does not look at your work products.

Now: MO (supv. samples work): R (working) → Sr/Sp (supervisor praise/criticism)

The objective sampling of your work increases the reinforcing effectiveness of the supervisor’s praise and the punishing effectiveness of the criticism. **Again, I may ask about the evocative effect of work sampling and/or the reinforcing/punishing establishing effect of work sampling.**

For the exam again explain why in my example, work sampling cannot be an SD.

Note that the supervisor’s praise/criticism were available without the objective sampling of work, but it was not reinforcing/punishing (hence the objective sampling cannot be functioning as an SD).

9. At the end of the study objectives for this unit, I have included an excerpt from Olson et al. This study objective relates to that excerpt, paragraph 3.

Explain how the UMO of activity deprivation could disrupt monitoring performance and how/why the UMO manipulation of stretching breaks might improve such performance – using behavioral terminology, of course (that is making use of the value-altering and behavior-altering effects). Be able to label each of the effects in these examples with the terms reinforcer establishing effect, reinforcer abolishing effect, evocative effect and abative effect.

Motivation from a traditional I/O perspective

Aamodt, Chapter 9

10. 322,1 Note that Aamodt defines motivation as “the **internal force** that drives a worker to action” as well as the external factors that encourage action. This is a common type of definition of motivation. Given this definition, you cannot measure motivation directly; rather you must infer it from “action” (behavior/performance).

One of the very important conceptual and empirical advantages of the MO is that you can measure it independently from behavior; that is, you can measure the extent to which a person is food deprived or water deprived.

For the exam (Aamodt and ppt): (a) How does the traditional way of conceptualizing and measuring motivation differ from a behavior analytic way of conceptualizing and measuring motivation? and (b) what is the important conceptual and empirical advantage of the MO from an objective scientific perspective?

11. 322,1 The MO does account for "driving a worker to action," although schedules of reinforcement also influence this.

For the exam, based on the material below explain how the MO accounts for the concept of *drive* in traditional motivational theory.

The MO determines what is or is not reinforcing at a particular moment in time and then evokes or abates behaviors that have, in the past, resulted in that reinforcer.

12. Skip to 330,2. Describe Maslow's theory as follows: Maslow maintains that behavior is motivated by the **satisfaction** of **innate/genetic** needs. According to Maslow, there are **five basic needs, arranged in a hierarchy. When lower level needs are satisfied, then the next need in the hierarchy "takes over" and motivates behavior.**

13. 332,1-4 Not for the exam. I have always found it interesting that the theory has been and remains very popular with managers (and, in general in business colleges), despite the fact that academicians have questioned it since the. I have to admit I have some problems with the fact that Aamodt states that "it may still be useful" even though it has not been supported by research (332,4).

14. In lecture, I will use Maslow's needs to demonstrate how to translate the concept of "needs" into behavioral terms. Learn this. Not surprisingly, I will be using the concepts of (a) the motivating operation, (b) unconditioned reinforcers and (c) conditioned reinforcers.

15. Skip to 347,3, Expectancy Theory. (I am going to cover the material on goal-setting and incentive systems in future units.)

A. Define the major components of expectancy theory (I am going to give an expanded version of this in lecture and in the ppt presentation). The theory is summarized nicely in 348,1-2 - it may help you to understand how all of these factors influence motivation from this perspective.

B. Expectancy theorists end up recommending the same types of interventions that behaviorists recommend - it exists in a "cognitive" parallel universe to behavioral psychology, if you will. **I will provide a behavioral translation of the major components of the theory in lecture. Learn these for the exam.**

16. A. 350, 1. According to Adams' equity theory, what motivates behavior? Note that it can be summed up rather easily – *inequity* between the ratio of one's inputs and outcomes and another's inputs and outcomes. Aamodt uses the term "outputs" rather than "outcomes." It should be *outcomes*. "Outputs" connotes what a person does – his/her outputs – not what the person "gets."

B. If given examples of ratios with numbers for "Person" and "Other," indicate whether they represent equity, underpayment or overpayment. While Aamodt is correct in that the ratios are determined by dividing the outcomes by the inputs, that is confusing. I will just give you numbers. For example:

You	Other	
Inputs/Outcomes	Inputs/Outcomes	
50/50	50/50	Equity
40/40	50/50	Equity
40/40	40/50	Underpayment

- | 40/50 | 40/40 | Overpayment |
|-------|-------|-------------|
|-------|-------|-------------|
17. Not for the exam, but note in 350,7, that research tends to support this theory when we are underpaid. However, research is not as clear when we are overpaid – we tend to have a very high tolerance if we are overpaid. See the last sentence in 351,2.
18. On the other hand, I believe the social comparison concept is a valid one (most of us do this) and we do need to incorporate that when we discuss motivation in industrial settings. The following represent possible behavioral analyses of the concept of inequity. Learn these two examples for the exam.
1. (General analysis) Signs of (more behaviorally, stimuli correlated with) inequity function as an MO that (a) makes equity more reinforcing and (b) evokes behaviors that have in the past, restored equity.
 2. (Underpayment) Signs of inequity related to underpayment function as an MO that (a) makes one's current consequences less reinforcing and (b) abates behaviors that have in the past resulted in those reinforcers, and/or (c) evokes other behaviors that have in the past, restored equity.
- Not for the exam, but food for thought: Why would underpayment be more likely to function as an MO than overpayment? Why would overpayment for **some** individuals function as an MO to evoke behaviors to restore equity? I guess what I am asking here is why signs of equity would function as reinforcement for individuals in our culture (some individuals anyway) even if the individuals are overpaid?
- What I am getting at here, by the way, is agreement with Adams that we are dealing with a learned motivating variable, not a biological one. If one has been reinforced in the past for behaving in a “fair” and “equitable” way, then “fairness” and “equity” become conditioned reinforcers. On the other hand, if you have been reinforced in the past for behaviors that lead to your own advantage even if it results in the disadvantage of others, then “fairness” and “equity” will not become conditioned reinforcers (and stimuli correlated with “getting more than your fair share” will become conditioned reinforcers).
19. OBM representation in IO Psychology textbooks: Based on the following material, state how many of the 8 top selling IO textbooks both (a) include OBM in their discussion of “motivation” and (b) portray OBM favorably and reasonably accurately? (you only need to include the material that is boldfaced below)
- I recently reviewed the 8 top selling textbooks in IO psychology in order to select a new text for this course. I discovered that times are changing. In the past OBM was not included in texts, and if it was, the field was not portrayed well or accurately.
- My review revealed that: (a) **four of the eight discussed OBM in their “motivation” chapters favorably**; (b) one included OBM or, I should say, “Reinforcement theory” very unfavorably, and (c) three didn’t mention OBM at all in their motivation chapters (although two of these do talk about the importance of reinforcement in their training chapters).
- Muchinsky, which is by far the top selling IO text has deleted all material related to “reinforcement theory” in his most recent edition. Given the way he dealt with it in the past, I can’t decide whether this is a good thing or a bad thing.
20. Not for the exam: but turn to 338 and read how Aamodt deals with operant conditioning. It is actually a nice treatment. Note his statement in 338,2 that “research and applied literature abound with studies demonstrating the effectiveness of reinforcement.”

Now, for a sample of negative presentations, see the course pack, the section titled, “Reinforcement Theory:” Excerpts from four of the top selling textbooks. I have underlined or drawn lines in the margins so that you can note the most important parts of these excerpts. Consider the implications of some of the material. This is what students in traditional IO psychology programs are reading about our field. Overall, would you be inclined to support OBM if this is what you had read?

In fairness to these authors, I want to point out that we do not have academic text in OBM (which is why I use a course pack). For the most part, the books in the area have been written by our consultants for managers and supervisors. Thus, the traditional IO psychologists do not have a scholarly treatment available to them or a model on how we would deal with some of these issues – particularly the ethical concerns. It’s a problem.

21. Excerpts from the top selling textbooks and ppt.

A. What is the **main** argument or concern about “reinforcement theory?”

B. What is the most frequently cited “secondary” concern?

The secondary concern is mentioned quite frequently in the texts, but I did not copy the sections that addressed that issue for you. Again, I will talk just a bit about this one in lecture.

We really need to help traditional IO psychologists understand our positions on these issues. It is unrealistic to assume they are going to read books on behavior analysis or articles from *JOBM*. I am of the opinion that it is our responsibility to dialogue with traditional IO psychologists about these issues in a cogent, scholarly way. (And, no I haven’t done that – I always thought I would write an OBM book, but I never have gotten around to it! So, I realize I am part of the problem.)

THE END: But the excerpt from Olson et al. for SO9 is on the following page.

Study Objective 9

Olson et al., pages 18-19

Note: I have updated the terms used in this article because in the past students found the old terms confusing.

Unconditioned reinforcers and punishers and their supporting UMOs are of central importance for shaping for shaping the types of behaviors that will keep an individual healthy enough to survive and likely to reproduce, but they are rarely used directly to motivate workplace performance. Unconditioned reinforcers and punishers occur regularly during a person's workday, but these consequences are usually not contingent upon performances of special value to organizations (e.g., opportunities to eat are usually provided independently of performance). In most cases, generalized conditioned reinforcers (e.g., monetary incentives, social praise, stimulus changes intrinsic to tasks, completion of an assignment, "signs" of progress or success) maintain important organizational performances rather than unconditioned reinforcers. When this is the case, UMOs play only a supporting role in establishing the effectiveness of conditioned reinforcers, when those conditioned reinforcers have been "backed-up" by unconditioned reinforcers. However, UMOs may be important to workplace performance for reasons beyond a supporting role for generalized conditioned reinforcement.

If a person is hungry, tired, uncomfortably cold, or otherwise affected by a UMO, his or her behavior at work will reflect their motivational state. For example, a hungry employee will think about food, look for opportunities to take a break and have a snack, or procrastinate work and plan a dinner with a co-worker. Such behavior may compete with or displace the types of behavior that are of value to the organization. In this regard, UMOs can be powerful *distracters* from work tasks. One such UMO is activity deprivation, which is a pervasive condition when jobs require near continuous use of personal computers or other stationary electronic technological devices.

Some organizations manipulate activity UMOs for employees whose work involves restricted or minimal activity. For example, employees at an Intel microprocessor fabrication plant in New Mexico are periodically prompted during their shift by music over the loudspeaker to do 5-10 minutes of stretching exercises (Page, 2000). This activity is programmed for both office personnel and employees who participate in the microprocessor fabrication process. Although the prevention of cumulative stress injury is probably one rationale for this intervention, its effects as a UMO might also reduce the chances of costly manufacturing errors by reducing the likelihood that employees will be distracted during important performances. Once such performance might involve monitoring screens that track the operation of expensive manufacturing processes. Employees would need to detect subtle changes in machine operation and make necessary adjustments to avoid costly product defects. Fidgeting, looking around, and pacing are incompatible with such monitoring and might be evoked by activity deprivation. As a UMO, the stretching exercise breaks would momentarily decrease the reinforcing effectiveness of stimuli arising from gross muscle activity (reinforcer-abolishing effect), and decrease the momentary frequency of all behaviors that had produced such stimulation in the past (abative effect). The UMO manipulation would therefore reduce the relative frequency of fidgeting, looking around, or pacing when careful monitoring was required, thereby enhancing an important target performance of value to the organization.

Unit 4: Indirect Acting Contingencies and Feedback

Direct acting contingencies and rule-governed behavior

As most of you are probably aware, most of the performances we deal with in organizational settings represent rule-governed behavior rather than contingency-shaped behavior – due to the delay between the behavior and its consequences, or between the antecedent and the behavior. I have decided that (a) I really don't have time to cover the conceptual aspects of rule-governed behavior in this class and (b) that content is more appropriate for other courses in our graduate curriculum (PSY 6100, Conditioning and Learning and PSY 6760 Skinner's Behaviorism). Thus, I just want to make sure you understand the general point in this class.

For those of you who are interested in the theory/conceptual analysis of rule-governed behavior, there are two different widely accepted analyses. One was developed by R. Malott, the other was developed by two of Michael's students, E. Blakely and H. Schlinger. While Malott's is more popular, I prefer Blakely and Schlinger's analysis although their analysis has not received as much press or attention as Malott's. Of course, you should also read what Skinner had to say about this topic, so I have included the "classic" reference on rules. For those of you interested in learning more about these analyses, and importance in our field, please see the following articles.

Skinner, B. F. (1969). *Contingencies of reinforcement* (chapter 6, particularly pages 157-171). Englewood Cliffs, NJ: Prentice-Hall.

Agnew, J. L. & Redmon, W. K. (1992). Contingency specifying stimuli: The role of "rules" in Organizational Behavior Management. *Journal of Organizational Behavior Management*, 12(2), 67-76.

Schlinger, H., & Blakely, E., (1987). Function-altering effects of contingency-specifying stimuli. *The Behavior Analyst*, 10, 41-45.

Blakely, E., & Schlinger, H. (1987). Rules: Function-altering contingency-specifying stimuli. *The Behavior Analyst*, 10, 183-187.

Malott, R. W. (1992). A theory of rule-governed behavior and organizational behavior management. *Journal of Organizational Behavior Management*, 12(2), 45 -65. (Included in this issue are several commentaries on Malott's theory.)

Reading assignment for the exam

1. Michael, J. (2004). Chapter 9: Behavioral effects of remote contingencies. *Concepts and principles of behavior analysis* (revised ed.) (pp. 163-167). Kalamazoo, MI: The Association for Behavior Analysis.
2. Graph of proof operator performance from Union National Bank (to be explained in lecture).
3. Peterson, N. (1982). Feedback is not a new principle of behavior. *The Behavior Analyst*, 5, 101-102.
4. Balcazar, F., Hopkins, B. L., & Suarez, Y. (1985-1986). A critical, objective review of performance feedback. *Journal of Organizational Behavior Management*, 7(3/4), 65-89.
5. Johnson, D. A. (2013). A component analysis of the impact of evaluative and objective feedback on performance. *Journal of Organizational Behavior Management*, 33(2), 89-103.

Molecular vs. Molar

1. ppt, slide. Based on Bradley & Poling (2010), state the three perspectives in our field regarding whether delayed consequences should be referred to as direct acting consequences (reinforcers and punishers). Also, label two of the three perspectives with the correct conceptual/philosophical name (molecular or molar).

Michael article

2. Learn the distinctions between direct and indirect acting contingencies in the first paragraph.
3. 163,2-164,1 Michael is making a very complex argument. It is very important and represents one of the main arguments in the molecular vs. molar analyses of behavior - which is a hotly debated topic in OBM and the applied behavior analysis field in general.

Because Michael's argument is complex and often misunderstood by students, I have provided the following material as an explanation.

- A. Learn Michael's argument in detail. *Note very carefully that he does not argue in terms of the delay per se (and thus neither should you)* – he uses the concept of the automaticity of reinforcement.
- B. Explain why/how the example I give below about an FT schedule is related to this argument.
- C. In lecture I will provide diagrams of how my explanation re the schedules of reinforcement are related to Michael's example; learn these for the exam.

Michael is saying that receiving money for a grant is sometimes viewed as "reinforcement" for grant writing, and thus grant writing will increase in the future. However, without a complex verbal repertoire, the delayed receipt of money would not affect grant writing - thus is cannot be seen as operant reinforcement. Let's assume the grant money was awarded six months after the grant was written. Now assume that the grant was written, and six months later, instead of the receipt of grant money, the person gets a large inheritance. That large inheritance would NOT influence grant writing. If operant reinforcement was at work, however, BOTH the receipt of grant money AND the receipt of a large inheritance should influence grant writing.

Why? Because we know for a fact that operant conditioning is "automatic." Reinforcement will increase behaviors when consequences are causally related to them, of course. But reinforcement also increases behaviors when consequences are *not* related to them - that is, if a response is accidentally or what is called "adventitiously" reinforced (Skinner referred to such behaviors as superstitious, but that is a side point).

Let's say that we have a food deprived pigeon in the chamber. And the E is going to deliver food on an FT 20 s schedule - that is, the E is going to deliver food every 20 s regardless of what the pigeon is doing at the time (hence there is not a contingent or causal relationship between any behavior and the food delivery). But let's say the pigeon is pecking the floor right before the food is delivered. The food will reinforce the peck at the floor even though the peck at the floor was not related to the delivery of food - this is called accidental reinforcement. In other words, the key peck to the floor will increase even though the consequence is not causally related to it.

Thus, given the automaticity of reinforcement, if the increase in grant writing was in fact an example of direct reinforcement, then it should increase whether the consequence is the money from the grant OR the large inheritance. But grant writing is not going to increase in both cases, thus receipt of the grant money cannot be viewed as direct operant reinforcement even though it was causally related to it. Grant writing increases as a result of receiving grant money only because of more complex behavioral processes relating to verbal behavior about past events, rule-governed behavior, verbal stimulus equivalencies, etc.

4. 164,3-166,0. Note the types of things in OBM that function as indirect consequences. Be able to recognize and distinguish between direct and indirect consequences. Or, if given the consequences be able to state what the direct effect would be and what the indirect effect is likely to be.
5. 166-167. List all the clues that indicate that an effect is indirect (note that Michael has already discussed the delay issue - be sure to include this one). Give an *original* example of each. By original, I mean that you cannot use any of the consequences or behaviors that Michael uses in his examples (or, if I give any in lecture, any of the ones I use).
6. 167,3. Why shouldn't we use technical language to explain the effects of indirect effects?
7. 169,2-4.

A. **Explain completely** why we as behavior analysts have been successful from a practical perspective even though in the past many indirect effects have been discussed as if they were direct effects. He states three reasons - some students have real problems with the second one - study it carefully.

B. To make sure you understand that second reason, provide an example from OBM that illustrates the difference between how a traditional I/O psychologist might approach a performance/safety/quality problem vs. how a behavioral psychologist would. That is, what are different causes of behavior these two groups would come up with that would then influence their interventions? But see the ppt slide on this re behavior-based safety (BBS).

Peterson article

8. 101, 2-101, top of the second column. Explain why, according to the author, the question about which function feedback serves or even whether it serves a dual function as a discriminative stimulus or reinforcement is inappropriate.
9. A. Explain the reasons why feedback the way it is commonly provided in applied settings, cannot be examples of simple reinforcement or discriminative stimulus control (there are two given, one in the first sentence in 101, 3 and one in the last full sentence of the paragraph - students often miss this second point but it is extremely important and I will be expanding on it in lecture.). Note that on the exam I may ask two separate questions: First, why feedback, in most situations, should not be considered simple reinforcement; and second, why feedback should not be considered a simple discriminative stimulus.
 - B. I will discuss this in lecture and provide diagrams that explain these reasons. Learn the diagrams.
10. Lecture objective: Peterson argues that you cannot consider feedback a consequence because it is not provided contingently upon a response, as is reinforcement. That is, reinforcers are provided when a particular response occurs but is not provided if that

particular response does not occur. On the other hand, in applied settings, "feedback" is typically provided when the appropriate response occurs and when it does not occur. But is this true? After lecture, be able to explain Peterson's point and also my reanalysis in which "feedback" can be viewed as being contingent upon a response.

Balcazar, Hopkins and Suarez. Note this is a classic article in our field with which all professionals are well acquainted. Alvero, Bucklin, & Austin conducted an updated review of feedback, that was published in *JOBM* in 2001. This is also a very good review, however, I am including the Balcazar et al. paper because of their astute conceptual and theoretical analyses, which of course Alvero et al. didn't repeat in their article because they were already contained in the Balcazar et al. article. There has not been an update since 2001. But the interest in these analysis is evidenced by the fact that the Alvero et al. article was the **most frequently cited article in *JOBM*** in 2013.

11. 66,0 Below, I update the information about the % of studies that have used feedback as an intervention. Over a thirty-year period (based on the current review and the two I cite below), what is the range of the percentage of studies published in *JOBM* that have used some form of feedback? 65%-70%

What this means is that these data are very, very stable.

Nolan, R. V., Jarema, K. A., & Austin, J. (1999). An objective review of the *Journal of Organizational Behavior Management: 1987-1997*. *Journal of Organizational Behavior Management*, 19(3), 83-114.

VanStelle, S. E., Vicars, S. M., Harr, V., Miguel, C. F., Koerber, J. L., Kazbour, R., & Austin, J. (2012). The publication history of the *Journal of Organizational Behavior Management: An objective review and analysis: 1998-2009*. *Journal of Organizational Behavior Management*, 32(2), 93-123.

12. 74,3. Based on the following material in this study objective: Currently, what do we know about the relative effectiveness of daily, weekly and monthly feedback in organizational settings? Based on two experimental studies (see below), daily feedback appears to be **moderately/somewhat** more effective than weekly feedback. There haven't been any direct comparisons of weekly and monthly feedback (but given that daily feedback is better than weekly, one would assume that weekly is better than monthly).

Not for the exam:

Surprisingly few studies have directly compared the relative effectiveness of daily, weekly, and monthly feedback. Balcazar et al. found that daily and weekly feedback were equally effective, and both were more effective than monthly feedback. The two more recent experimental studies found that daily feedback was somewhat more effective. The cost/difficult of providing feedback daily vs. feedback, of course, must be weighed by whether the moderate difference is worth the cost to organizations.

Interestingly, Alvero et al. (2001) reported that daily, a combination of daily and weekly, and even monthly feedback were more effective that weekly feedback. That doesn't make a lot of sense logically – that is, that both daily and monthly would be better than weekly. Thus, my guess is that is not reliable and is probably due to the small sample of articles and/or the particular feedback interventions used in those studies.

The main support for the position that daily feedback is somewhat/moderately more effective comes from:

So, Y., Lee, K., & Oah, S. (2013). Relative effects of daily and weekly feedback on customer service behavior at a gas station. *Journal of Organizational Behavior Management*, 33(2), 137-151.

Additional support, although the data were not definitive comes from:

Pampino, R. N., Jr. MacDonald, J. E., Mullin, J. E., & Wilder, D. A. (2003). Weekly feedback vs. daily feedback: An application in retail. *Journal of Organizational Behavior Management*, 23 (2/3), 21-43.

Another question that is raised is that given the moderate increases in performance seen in So et al., is it feasible or cost-effective for an organization to provide daily feedback? Most articles that have used daily feedback that have maintenance data or a discussion about sustainability, state that the organization has requested to moving to less frequent feedback. It is an interesting issue for us to deal with in organizations. Is the improvement re daily feedback worth the costs (economically and behaviorally) to supervisors? How hard should we push? I don't have an answer – I don't think there is one. I think it is going to depend upon the organization.

13. For the exam: Based on the material below, explain why you need to be cautious when interpreting the results of the reviews of feedback (Balcazar et al. and Alvero et al.) as well as other types of similar reviews.

While these type of reviews provide useful guidance, conclusions are based on the structural analyses of procedures that varied along many different dimensions. Only systematic experimental comparisons with appropriate controls can ultimately determine whether different types of feedback affect performance differently.

Not for the exam: There have been at least three instances where the results of direct comparisons of feedback procedures have differed from the conclusions of the review articles: Goltz, Citera, Jensen, Favero, & Komaki (1989), the So et al. article I mentioned in the preceding study objective, and the recent results of Sarah VanStelle's dissertation. **So be very cautious about the conclusions of the review studies; the results are not based on experimentally controlled studies.**

14. 76,3. Describe the most parsimonious explanation for why feedback is only sometimes "reinforcing" (I have "reinforcing" in quotes because, as Peterson explained, we typically are dealing with indirect acting contingencies).
15. 77, 1. Why is it that if reinforcement already exists for the appropriate behaviors, feedback may improve performance? Provide a careful analysis as the authors do. (A second analysis is provided in 77,2 but this one has some serious flaws when it is analyzed carefully, so I am not going to ask you to learn that one.)

Not for the exam, but Barbara Bucklin, Heather McGee and I published a study (*JOBM*, 2003, 2/3, pp. 65-94) that supports the assumption that feedback enhances the effectiveness of monetary incentives (tangible rewards) but we used a reversal design and performance did not reverse when we removed the feedback; thus the results must be interpreted cautiously.

16. Based on the material below, state the percentages of applications in which performance improved consistently when (a) used alone, and (b) used in combination with other interventions. This is very important.

78,4. Note that when feedback was combined with some type of tangible reward, performance improved consistently in 13 of 15 applications. The percentage works out to almost 90% (87% actually). Now, return to Table 1 on page 71. When feedback was used alone, performance improved consistently in only 28% of the articles – you can round to 30% for the exam.

Not for the exam: Alvero et al. also reported that feedback when combined with other interventions was more consistently effective than when used alone, the discrepancy was not as large.

17. 81,4 - 82,0.

A. Explain why supervisory feedback may be more effective than when feedback is provided by other sources.

Let me provide an expanded analysis that relates to the point the authors are making. Given that the feedback evokes supervisory behavior, when feedback indicates that a subordinate's performance is good, that may cause to supervisor to praise the subordinate, which may actually be what controls the worker's behavior - not the feedback itself. Alternately, if the feedback indicates that a subordinate's performance is not good, that may cause the supervisor to criticize or prompt better performance. It may be these differential consequences that the supervisor provides to the employees (again, not the feedback itself) that affects the performance of employees.

B. After lecture, provide a second reason why feedback may be more effective when provided by the supervisor.

18. 84, 1 What is the fundamental conclusion that resulted from this review? Please, please, please remember this - for some reason, students tend to forget this. If feedback "works" **over the long run** in the absence of explicit correlation with other reinforcers/punishers, then it is no doubt the case that the feedback is being implicitly tied to other reinforcers/punishers.

19. 84,2 If feedback is going to be established independently of careful consideration of the existence of functional consequences as was the case in most of the studies reviewed, what type of feedback system is the best bet for achieving results?

Johnson article: This article is an important article, indicating that to be maximally effective feedback must have both an objective and evaluative feedback component. This is related to the Balcazar et al. article because of their analysis/position that in order to be effective, feedback must be paired/linked to more "primary" rewards/consequences (an evaluative component is important). Also, in the next unit, you will read some applied articles that suggested that both evaluative and objective components are necessary, but the results weren't as definitive as the results of this study.

20. 90,1-2. Not for the exam, but note the exquisite behavioral analyses of the potential functions of evaluative feedback: if you ever need to do this type of analysis, you should refer back to this paragraph.

21. 91,1. Again, not for the exam, but I really like the analysis presented in the first few sentences. Other authors have made analyses of feedback similar to Johnson's other analyses, but I have never seen this one before. To understand this, it may be helpful to remember that evaluative feedback may consist only of supervisory comments such as "You did a great job!", "You are doing super!", "Good work!", and may not specify the employee's actual level of performance or what a "great job" or "super job" exactly consists of.

The following diagram may help you to understand how evaluative feedback may serve as an MO when both evaluative and objective feedback are provided.

MO: (evaluative feedback):

R (good work or self-stated verbal rules that evoke good work) →

Sr (objective feedback)

Explanation: As an MO, evaluative feedback may increase the reinforcing value of objective feedback and directly evoke good work or, alternatively, evoke self-stated contingency-specifying rules that then evoke good work, with objective feedback then serving as a reinforcer (either directly for the work or the verbal statements)

22. 91,1. Yet once again, not for the exam, but again note the excellent behavioral analyses of the possible functions of objective feedback, related to (a) providing specific information about performance and a clear measure performance improvement, and (b) informing the worker that his/her work is now being monitored. Note that depending upon the history of the worker, the self-stated rule that may be evoked may be very similar to or identical to the type of self-stated rule evaluative feedback evokes but absent the specific evaluation that has occurred in the current environment. That is, objective feedback may evoke statements like "I am now being watched/monitored, and my good performance is **likely** to be rewarded now and my bad performance is **likely** to be criticized" while evaluative feedback may evoke statements like "My boss **will** praise my performance if I perform well and **will** criticize me if my performance is bad." The first type of rule is based on generalization from historical contingencies; the second based on the actual contingencies in the current work setting. The different rules may affect workers the same because most of us have a history that when someone starts providing objective feedback, consequences will follow - but then again the two types of rules may not affect all workers the same, depending upon the histories of the individual workers. Also, going back to Balcazar et al., the "likely" rule may evoke higher levels of performance initially, **but if nothing good or bad happens to the employee based on the objective feedback, one would not expect the higher levels of performance to maintain.**
23. 97,3 State the results of the study in terms of the percentage increases for objective feedback alone, evaluative feedback alone, and the combined objective and evaluative feedback in comparison to no feedback.
24. 99,2. Based on the material in the article and the following explanation:
- A. What factor could account for the fact that Johnson et al. (2008) found no benefit of using objective feedback while the current study found a benefit?
- B. Why may this factor be important? (see next page)

C. Why might people respond differently to computer- vs. human-delivered feedback? (see next page)

24B&C answers: Although not expanded upon in this article, these results have implications for using electronic devices (computers, smart phones, iPads, etc.) to provide feedback. Specifically, such feedback may not be effective and, if effective, not nearly as effective as when a person provides the feedback. It would be an interesting study to conduct (human vs. tech delivered **objective** feedback and human vs. tech delivered **evaluative** feedback). The implications are that evaluation is implied when the source of the feedback is a human – that is, it is rare that people who give us feedback aren't evaluating our performance while evaluation is not implied by a computer or electronic device. It would also be interesting to determine whether evaluative feedback by a human and by the computer would have the same effect.

THE END.

Unit 5: Feedback cont., Goal Setting, and Schedules of Reinforcement

Reading Assignment

1. Aamodt, Chapter 9, pages 334-342
2. Crawley, W. J., Adler, B. S., O'Brien, R. M., & Duffy, E. M. (1982). Making salesmen. In R. M. O'Brien, A. M. Dickinson, & M. Rosow (Eds.) *Industrial Behavior Modification* (pp. 184-199). New York: Pergamon Press.
3. Crowell, C. R., Anderson, D. C., Abel, D. M., & Sergio, J. P. (1988). Task clarification, performance feedback, and social praise: Procedures for improving the customer service of bank tellers. *Journal of Applied Behavior Analysis*, 21, 65-71.
4. Gaetani, J. J., & Johnson, C. M. (1983). The effect of data plotting, praise, and state lottery tickets on decreasing cash shortages in a retail beverage chain. *Journal of Organizational Behavior Management*, 5(1), 5-15.
5. Wilk, L. A., & Redmon, W. K. (1998). The effects of feedback and goal setting on the productivity and satisfaction of university admissions staff. *Journal of Organizational Behavior Management*, 18 (1), 45-68. Oddly, this is listed as 1997 on the web site for JOBM. The issue was published in 1998.

Recommended Readings

6. Gaetani, J. J., Johnson, C. M. & Austin, J. T. (1983). Self-management by an owner of a small business: Reduction of tardiness. *Journal of Organizational Behavior Management*, 5(1), 31-41.

This is another one of my favorite articles. I like this article for two reasons. First, it is hard to believe that an owner of his own business would routinely show up to work an average of 3.75 hours late (he opened the store; his machinists worked second shift). Second, while self-logging and data plotting decreased the tardiness of the owner, it was not until the researchers had him record the potential number of lost customers due to his tardiness that his tardiness remained consistently low. That is, it wasn't until an important (and certain) *personal* consequence was made clear to him by recording these data that his behavior was affected: "If I am late, I will lose customers and business."

7. Jeffrey, S. A., Schulz, A., & Webb, A. (2012). The performance effects of an ability-based approach to goal assignment. *Journal of Organizational Behavior Management*, 32(3), 221-241.

This is a very interesting lab study that showed that ability-based goals are more effective than "one-goal" for all with low and middle performers (not for high performers). Lower and middle performing Ps in the ability-based goal condition (goals based on only low/average performance) performed better than their counterparts in the one goal condition that was based on the performance of all performers (including high performers). Also, low and middle performers decreased their performance over time. This means that if possible, organizations should set ability-based goals but they need to be very careful how they do that, particularly if some type of tangible reward or monetary bonus is provided for goal attainment. It would be a disaster for an organization to set different goals for different workers and give the same tangible/monetary reward for meeting the goal – for obvious reasons. It does support

setting tiered goals with different bonuses/money for meeting each. The Performance Matrix would be a great tool for this. Also, recognize that the results may have been very different if the authors had used piece rate monetary incentives rather than an all or none bonus for reaching the goal. That is, low and middle performers probably would have performed better in the one-goal condition because regardless of whether or not they met the goal, the better they performed, the more they earned. That would be an interesting study. Note that most organizations do not set more than one goal, particularly if they a bonus system in place: You meet the one goal, you get the bonus; you don't meet the goal, you don't get the bonus. Sorry, this got long-winded.

8. Tammemagi, T., O'Hora, D., & Maglieri, K. A. (2013). The effects of a goal-setting intervention on productivity and persistence in an analogue work task. *Journal of Organizational Behavior Management*, 33(1), 31-54.

Perhaps oddly, I am not recommending this article because of the study or the results of the study, but because of the analyses of the possible behavioral functions of goals and what reinforces goal-related performance. The authors discuss all of the possibilities that have been presented before including an RFT (relational frame theory) analysis. They do an excellent job, although to really understand some of the analyses, you would have to refer back to the original articles.

Goal Setting

Aamodt, Chapter 9, pages 333-337

1. 334, 2. Not for the exam, but notice the really nice acronym for the qualities goals should have. And, also note that OBMers would agree with each of the qualities listed.
2. 334,3 Locke and Latham maintain that specific goals are better than general goals such as "do your best" or "do as many as you can." We certainly agree.
 - A. After lecture, but able to provide a behavioral analysis of why specific goals are indeed better than general goals (generally). [this analysis is actually from Fellner, D. J., & Sulzer-Azaroff, B. (1984). A behavioral analysis of goal setting. *Journal of Organizational Behavior Management*, 6(1), 33-51.]
 - B. After lecture be able to provide a behavior analysis of the problems with "do your best" goals (specifically).
3. 334,6-335,0. Note the very nice example of problems that can occur when goals are too difficult. Just as the students in the example in 334,7-335, 0, employees also sometimes set goals too high. In lecture I am going to provide a behavioral analysis of why goals should not be too difficult.

After lecture, provide a behavioral analysis of why goals should not be too difficult – be able to provide both the diagrams and verbal analysis.

Not for the exam: These analyses can explain the results of the Jeffrey et al. study I describe above – that is, why low and middle performers performed better and decreased their performance over time. Consistent with this, Daniels argues that it is better to set easy goals and then gradually increase them over time – because performance is "successful" more immediately. However, note my caution above re insuring that if tangible or monetary

rewards are based on goal attainment, higher rewards should be provided when workers meet higher goals.

Also, not for the exam but interestingly, there is no set criterion for when a goal is too easy, “challenging but attainable”, and too difficult. Researchers from a traditional goal setting perspective have operationalized this to some extent by determining the percentage of employees (or participants in studies) who have met a specified goal in the past. Difficult goals have sometimes been defined as a goal that only 10% of employees can meet (called stretch goals by Daniels), while a challenging but achievable goals has been defined as a goal that 50% to 20% of employees can meet (note that is a very large range)!

Also, interestingly, no published study has examined the effects of giving a group of employees multiple tiered goals. Two of my students (Jessica Urschel and Dan Sundberg) have conducted dissertations in this area, but, unfortunately, the goals we set at the beginning of the study were off. This is an area that is ripe for research! And, is relevant to the Performance Matrix because the Performance Matrix presents multiple tiered goals for employees for each measure of performance! We are continuing this work in my lab.

4. 335,1. “Commitment” is an interesting issue. All of the factors listed in the last sentence are important. For the exam, be able to list them, noting very carefully the part about reward.

Not for the exam, but how do we ensure goals are attainable and convince employees they are attainable? The best way I know to do this is by collecting and showing employees *baseline* data. I have never had employees in an organization balk at a goal that was reasonably set based on baseline data.

5. 335, 6 and ppt. Does participating in goal setting increase performance?

Not for the exam: Should we be concerned about commitment if it doesn’t correlate with performance?

6. A. Based on the following, when implementing a performance improvement intervention, what specific components should be included?

1. We know that the combination of goals and feedback is more effective than either alone. (from both traditional IO and OBM studies)
2. Although no direct comparisons have been done, the literature suggests that graphic feedback is the most effective type of feedback to use with goals: better than written or vocal. (preferably the graphic feedback should be provided at least once a week) (from on OBM studies)
3. Performance improves more when consequences are added. (this next part is not for the exam, but performance has improved more when monetary rather than nonmonetary incentives were used) (from both traditional IO and OBM studies)

Thus (and finally the answer to 6A): When possible, (a) goals, (b) graphic feedback that shows performance over time at least once a week, (c) performance consequences, preferably monetary.

- B. When using group rather than individual goals, what factor should be taken into account? Why?

The size of the group. Group goals with small groups appear to be more effective than group goals with large groups

This next part is not for the exam: We don't know the critical "number" – no studies have systematically manipulated the size of the group. It would be an interesting study. While size of the group has not been manipulated with either group goals or monetary incentives, a recent meta-analysis that you will be reading in the incentive pay unit determined that group size did affect performance when people received incentives: the smaller the group, the more incentives increased performance.

7. Not for the exam, but the following are the prevalent analyses re behavioral functions of goals. They parallel the analyses of feedback, with one exception: progress toward reaching the goal can serve as a reinforcer. Although part of me would like you to learn these analyses, I think it would be too much material for the exam, so I'll just present them here.
 - A. SD or indirect acting SD: Rewards are provided in the presence of goals, but not in their absence.
 - B. MO: Makes reaching the goal and, more immediately, progress toward reaching the goal reinforcing and evokes behaviors that have resulted in progress toward/reaching the goal.
 - C. RFT: The goal evokes a verbal relational statement: "My current performance is **less than** the goal." This evokes goal-directed behavior, with the reinforcer being statements related to reductions in discrepancies – that is "My current performance is still less than the goal, but closer." Note that this analysis is very close to the fact that the MO may make progress toward the goal reinforcing (as well as goal attainment).
 - D. A bit more complicated: Malott's rule governed analysis, which I am not going to do full justice to. The goal evokes a verbal rule such as "If I don't reach the goal, I am going to look bad or get criticized by my supervisor" which is an MO that makes noncompliance aversive. Goal-directed behavior is reinforced by an immediate decrease in aversiveness created by noncompliance (which is a direct-acting escape contingency). The aversiveness is not terminated until the goal is reached.
8. From lecture: Daniels maintains that if you set a goal and performers meet that goal but do not exceed it, it indicates that the behavioral contingency controlling the performance is a *negative reinforcement contingency* (an aversive contingency) rather than a *positive reinforcement contingency* (which he advocates). I will argue in lecture that this is an incorrect analysis.

After lecture and for the exam, provide the main point of my analysis, but be sure to include the critical points about negative vs. positive reinforcement. (You do not have to learn the Union National Bank example which I use to argue this point.)

9. From lecture again:
 - A. What is the most common mistake that business people make after implementing a goal setting program for employees?
 - B. Why is the answer to A a problem?
 - C. What are employees going to do when management does the above?

Schedules of reinforcement. This is a *much* misunderstood topic in OBM. Because (a) most “schedules of reinforcement” in applied settings are not examples of the basic schedules of reinforcement that have been examined in the lab (even though they are often erroneously called the same thing) and (b) because adult humans talk to themselves about how consequences are related to their performance, schedules of reinforcement per se have little relevance to work settings. I am *not* saying that more frequent reinforcement is not better than less frequent reinforcement (it is), but we usually cannot draw a parallel to the basic schedules of reinforcement examined in the lab.

10. I am providing the definitions for the basic schedules of reinforcement below - you do NOT have to memorize them, but you will need to know them to do the exercise I am asking you to do.

Fixed ratio: Reinforcement is provided after a specified number of responses.

Variable ratio: Reinforcement is provided after an average number of responses.

Fixed interval: Reinforcement is provided for the first response that occurs after a specified period of time has elapsed.

Variable interval: Reinforcement is provided for the first response that occurs after an average period of time has elapsed.

Fixed *Time*: Reinforcement is provided after a fixed period of time, regardless of any response.

Variable *Time*: reinforcement is provided after an average period of time has elapsed, regardless of any response.

11. **For the exam:**

A. Is hourly pay an example of a fixed interval schedule? Why or why not?

B. In lecture, I am going to talk about a study that was published in which the schedule of reinforcement was referred to as an FR3. After lecture, be able to state the example and explain why the schedule was not an example of an FR3 schedule of reinforcement.

12. Based on the following material, be able to state, to date, what the literature shows about how different ratio schedules affect performance in organizational settings. Also, what appears to be the most important factor with respect to improving organizational performance?

Don Hantula, a professor at Temple University, published a review entitled “Schedules of Reinforcement in Organizational Performance, 1971-1994.” Among other things, he concluded that (a) the parameters of the schedule did not result in consistent differences in performance; rather (b) the presence of a contingent relationship between performance and rewards/reinforcement was the most important factor with respect to improving performance.

The same year, Bucklin and Dickinson (2001) arrived at the same conclusion when they reviewed studies of monetary incentives. Hantula’s review included both monetary and nonmonetary rewards, while ours was restricted to monetary incentives. Hantula and Bucklin & Dickinson arrived at their conclusions independently. Neither knew that the other had written their articles until they were published.

Anyway, *what this means is that performance-contingent rewards do increase organizational performance but different schedules (fixed vs. variable ratio schedule; FR1 vs. FR4; CRF vs. VR2, etc.) do not differentially affect performance.* It may well be that people learn a simple “rule” – the more I produce, the more I earn or get.

In case you are interested, Hantula's article is published in the following edited handbook (pages 139-166): C. M. Johnson, W. K. Redmon, & T. C. Mawhinney (Eds.). (2001). *Handbook of organizational performance: Behavior analysis and management*. The Bucklin and Dickinson article is provided in U7 of the course pack.

13. Our basic principles have been called into question by others outside of our field (particularly in I/O by the expectancy theorists) because adult humans do not show the same typical response patterns of nonhumans when exposed to reinforcement schedules. There are two reasons why humans do not show typical response patterns. Learn the following two reasons:
 - A. While schedules used in applied settings are, indeed, schedules of reinforcement, they rarely, if ever represent the schedules (FR, VR, FI, VI) examined in the laboratory with nonhuman animals, even though they are often called the same thing. Given that the schedules are not the same, one would not expect the same or similar patterns of behavior.
 - B. Adult humans who are verbal, tend to describe the nature of the contingencies to themselves, and then their behavior is influenced by those verbal descriptions or the self-generated rules they develop. For example - under an FI schedule, they may say to themselves - responding slowly is reinforced, they would not emit as many responses during an interval. Or FR, they may say, responding quickly is reinforced. Because of that verbal behavior, response patterns may not at all resemble the response patterns of nonhuman animals.
14. Read the Latham & Dossett article in the course pack, paying particular attention to the Method section, pages 51-53. Be able to state any three (good) reasons why the "CRF" and "VR4" schedules were not "true" CRF and VR4 schedules based on the definitions of these basic schedules and a molecular perspective.

We will be discussing this in class during the class period before the exam. For an opportunity to earn 1 or 2 bonus points, see the U5 ppt slides, slides 3-6.

Crawley et al. (back to feedback)

I am including this because it is the best article I have seen in improving sales behavior (rather than results), and is, of course, a very fine example of the use of prompts and feedback. Note that the sales reps were already on commission yet this program dramatically improved sales by focusing and training appropriate sales behaviors. Moreover, I expect that the behaviors that are identified in this article would generalize to other sales positions as well. Also, note the use of the performance improvement opportunity analysis.

15. 185, 6 and 187,0-1.
 - A. Carefully explain the approach that was NOT successful in identifying what made a sales representative effective. Explain WHY this approach was not successful.
 - B. Also, there is a general point to be learned from this. Be able to provide this general point for the exam as well. Often your exemplary performers cannot tell you why they perform as well as they do – that is, they cannot specify the exact behaviors they engage in that makes them successful. Those behaviors are often *contingency-shaped* and under the control of immediate contingencies of reinforcement - employees have never had to describe them.

(This is often true of excellent skilled workers such as automobile mechanics, electricians, etc.).

16. 187,2. Not for the exam, but notice how many top sales reps were observed for how long for how many hours in order to develop the list of sales behaviors. This is exquisite. Also, who else was interviewed? Stop and think about this a moment – this was an extremely labor-intensive process.

Again, not for the exam but note the incredible specificity of the behaviors identified as listed and discussed in 193,1-196,3 – I just want you to recognize how impressive it is.

17. 188, 3 State (a) who the coach was; (b) when the prompts occurred; (c) what and how many behaviors were prompted; (d) what occurred after the correct behavior; and (e) when the sales representatives reviewed their own performance – which the authors call the post-call learning cycle. You do not have to memorize the whole procedure – I will give you the information that I am giving in this study objective.

Not for the exam: We haven't talked about this yet, but prompts (in this case corrective feedback) appear to work best if provided right before the individual has the opportunity to engage in the relevant work performance.

18. 188,5. What are two reasons that commissions did not function as effective rewards? For the first, note specifically the 3-month lag time in the reflection of their performance (they couldn't have been reinforcers because they were too delayed). That is, sales reps received commissions monthly, but the commission they received during the current month reflected their performance 3 months earlier.

For the second (last sentence in the paragraph) note that commissions are based on actual sales, an accomplishment measure. If the sales reps cannot engage in the appropriate behaviors, providing rewards for accomplishments will NEVER increase performance. And, it became clear that the sales reps did not know what behaviors would lead to better sales.

Not for the exam: When Tom Gilbert's classic book, *Human Competence*, was published in 1978 it generated an incredible amount of controversy. Why? He stated that we should be focusing on accomplishments, not behavior. Accomplishments added value and were "worthy" to an organization while behavior was costly to an organization. That is, if a worker could produce an accomplishment with fewer behaviors (more efficiently) the better; thus we should not be rewarding behaviors, but accomplishments. Some behavior analysts went ballistic, on the grounds that you cannot "reinforce" accomplishments, only behaviors (and, after all, we were *behavior* analysts). There were a very large number of presentations at ABA for several years that addressed: Accomplishment versus Behavior (not unlike recent presentations on systems analysis versus performance management). I always felt the talks were silly. **You start with the accomplishments**, but if employees do not know how to produce the accomplishments, or there is indication that employees are producing accomplishments by unethical or aversive means, then you need to focus on behaviors.

Perhaps needless to say, I also believe the controversy surrounding systems vs. performance management is a "straw man" argument. You need both. You should use systems analyses to identify the critical accomplishments and areas you should focus on; but there certainly are times you need PM. You can change systems, but employees must change their behaviors in order for those systems to change.

19. 196,4. Why was it important to compare the data to records for the same months in the preceding year? This is a point that you should remember when intervening in an organization with respect to your baseline data.
20. 197,3 -4. Not for the exam. Notice the very nice analysis of the negative consequences for in-home calls and the changes in behavior when these consequences were changed. Things like this happen all the time in the real world and as a performance manager you must be constantly alert for such things.

Crowell et al. article: I am primarily including this article because it is an applied study that nicely demonstrates that task analysis by itself improves performance, but only moderately. Performance improved further when objective (non-evaluative) feedback was provided, and increased again when supervisors praised performance when presenting the feedback. These results are consistent with Johnson (2013), the article from last week. The distinction between “objective” feedback and “evaluative” feedback is an important one.

21. 65,2-66,1. Not for the exam, but note the discussion of whether feedback exerts control as an antecedent, consequence, or both, and thus the rationale for the study. They are making one of the same points I made earlier – that is if you implement a feedback program you are also, to some degree, providing task clarification as well.
22. 67,2nd colm, 2. Not for the exam, but note the exquisite observation procedures.
23. 70,1. Task clarification effects emerged quickly and were stable over time. On the other hand, the feedback intervention produced a gradual improvement in teller performance over time.

These performance patterns are consistent with what behavioral mechanisms or behavioral principles? In other words, what behavioral principles are likely to have been responsible (a) for the effects of task clarification and (b) for the effects of feedback? Why? (I have answered the “why” in my two sentences above.)

24. 70,2.
 - A. What finding, other than the ones related to task clarification and feedback, was of potential significance?
 - B. What does the finding suggest?
25. 71. Not for the exam, but read the potential economic impact this intervention had and in 71,4, the fact that the bank itself extended this program to an additional six branches and at the time the article was written was in the process of implementing the program in the remaining branches. Unfortunately, we don’t see this happen very frequently.

Gaetani & Johnson – cash shortage article

26. 7, 2. Not for the exam but notice how the efficiency estimate measure was calculated. This is an excellent measure. If you ever target this type of performance, remember this article!
27. 7,2 Why were EEs used as the measure?

Not for the exam but notice in 8,1, note that the EE was calculated from archival data. This is a very nice procedure because the organization does not have to wait until baseline data are collected before the intervention is begun. Also, notice that the organization already had the data used for the measure, thus the researchers did not introduce any new measures and

did not have to introduce any new data collection procedures. This is an excellent procedure, and you should remember this when developing measures for your own interventions. ***If at all possible, it is good to take advantage of already existing measures/data in organizations.***

Gaetani and colleagues published several applied articles around this period of time– he always had a terrific “knack” of finding already existing measures to target.

28. 8,5. Describe the lottery intervention, including what the performance criterion was, how many lottery tickets were delivered and how much each lottery ticket cost. Notice the very small cash value of the lottery tickets – only \$1.00 a piece!
29. 10, Figure 1. Not for the exam, but the black triangles represent both feedback and praise – since praise was graphed with an open triangle and data plotting was graphed with closed (black) circle.
30. 11,2. Rank the interventions in terms of their effectiveness, starting with the interventions that were *least* effective.

Be careful when answering this, not just to say “data plotting and praise” for the least effective interventions – that answer would suggest that you are referring to when those two interventions were used together – rather, be sure to say something like “data plotting *alone* and praise *alone*.”

And, for the most effective intervention, remember that the intervention consisted of data plotting, praise AND lottery tickets, not simply lottery tickets.

Not for the exam: This is a very interesting study for a number of reasons. First, it is one of the few, if not the only one, that examined supervisory praise *without* feedback. And, interestingly, it was not very effective. Again, these results are consistent with Johnson (2013). Perhaps Daniels was right when he said, “In God we trust, all others bring data.” Also, this ties in nicely to the results that Komaki found (U2 article) in which *work sampling, not the number of consequences provided*, distinguished effective managers from ineffective managers.

Secondly, the study also examined data plotting (what we typically now call self-monitoring) by itself. And, it was not particularly effective by itself. **This is a consistent finding in the OBM literature** – one that we will be revisiting with the Richman et al. article in U8. Self-monitoring alone is not a particularly good intervention.

Note that Crowell et al. (preceding article) found that social praise increased performance *after* feedback had been implemented, but in that study, praise was *added* to the feedback. In the current study, supervisory praise was provided without objective feedback, a la Johnson (2013). (You are getting an idea of why I found the Johnson article so interesting and important.)

So, to sum up, self-monitoring (data plotting) by itself doesn’t appear to be a particularly powerful intervention; supervisory praise by itself doesn’t appear to be a particularly powerful intervention; and the combination of feedback, praise and tangible rewards appears to be the most powerful intervention. Again, ***remember your consequences!!***

- 31 Not for the exam, but notice the cost/benefit analysis in 13, 2.

32. Not for the exam, but notice in 14,0, the fact that “some of the store managers won up to \$25 from their earned lottery tickets.” It would have been nice to know how many store managers won money and how much money they won. The lottery was in effect for only 4 weeks – thus, it would also have been interesting to see how long the improvements would have lasted using the lottery tickets.

Wilk and Redmon article

Leslie Wilk Braksick, who founded CLG in 1993 and served as its president and CEO for years (she is now Chair of the Board), conducted this study as her doctoral dissertation at WMU. The study was conducted at University of Michigan. It is an excellent example of how to do research in the real world. There are few better models. This study is a follow-up of Wilk & Redmon (1990). The 1990 study was conducted at WMU as Leslie’s thesis. The supervisor was Pam Liberacki, who retired about 3 years ago, but was the Associate Director of Admissions and Orientation. She was a very staunch supporter of our program and behavioral approach. Leslie Wilk was hired as a consultant to UM based on the success of the program at WMU.

33. 50,2. Why was the efficiency measure used – in other words what does the efficiency measure tell us that the number of tasks completed for each section does not? (Do not just use the material in 50,2 to answer this - rather include the material in 60,0. It is an important point from an economic and productivity perspective).
34. 50,3. Not for the exam, but note the satisfaction questionnaire that was used. If you are looking for one to use, this sounds like a very good one.
35. 53,1. Not for the exam. The first time I saw this type of intervention - **daily** adjusted goal setting was in the earlier Wilk and Redmon article. It is a great solution in situations where the type of work fluctuates greatly from day to day or week to week.
36. 54,1. How often was verbal feedback given?
37. 54,1. How and when was the graphic feedback was delivered to each employee. (one thing I want you to notice is that the goals were individualized in this study and feedback was given individually.)
38. 54,3. What procedure was used to verify that the supervisor actually delivered the feedback? This is a great procedure. It is often used in studies to verify that the person who was supposed to deliver feedback actually did. I have used it myself in studies.
39. 57, 2-3. Not for the exam, but also note that performance was measured for approximately 30 weeks during the actual study, and follow up data were taken for 30 weeks. Thus, the entire dissertation took 60 weeks to conduct. Admirable.
40. 57,3-61,0. Not for the exam, but note the experimental design and the results! In 69,0, note the reduction in notification time, and the decreased cost of absenteeism. Again, this is very impressive.
41. 61,0. Most importantly, what does this study reveal?

THE END

Unit 6: Performance and Pay

1. Amadot, Chapter 9, pages 341-347.
2. Bucklin, B. R., & Dickinson, A. M. (2001). Individual monetary incentives: A review of different types of arrangements between performance and pay. *Journal of Organizational Behavior Management*, 21 (3), 45-137.
3. Honeywell-Johnson, J. A., McGee, H. M., Culig, K. M., & Dickinson, A. M. (2002). Different effects of individual and small group monetary incentives on high performance. *The Behavior Analyst Today*, 3(1), 88-103.
4. Garbers, Y., & Konradt, U. (2014). The effect of financial incentives on performance: A quantitative review of individual and team-based financial incentives. *Journal of Occupational and Organizational Psychology*, 87, 102-137.

An Introduction to Pay Systems

The majority of workers in this country are paid by the hour or receive a set salary per year. However, in an effort to increase employee productivity and the flexibility of labor costs for the organization, companies are increasingly adopting monetary bonus and incentive payment plans. In addition, because of the move to work teams, many companies are moving to group incentive systems. I am going to focus on incentive systems, but before I do, I want you to understand a few things about compensation systems in general.

Aamodt

1. 341,5 and Figure 9.2. What components should a compensation plan include and why should each be included?

Not for the exam. In Figure 9.2, base pay is divided into two components: market value and job evaluation. Market value relates to the salary that other companies are offering for the same position (external salary comparison). Job evaluation refers to whether the salary attached to the position is fair in terms of the importance of the job to the organization (internal salary comparison). The process by which this is determined is called job evaluation. All organizations do this. Together with the benefits package (and adjustments due to location – NYC and CA have much higher living expenses than Kalamazoo, MI), these factors determine whether companies will attract and retain employees. However, as discussed below, because all employees in a position are offered the same salary and benefits, they do not differentiate between good and poor employees and thus they do not usually “motivate” employees to perform well.

2. The motivation problem: Based on the material below explain two reasons why hourly wage systems do not result in well-motivated employees from a behavioral perspective.

If I ask this on the exam I will give you the reason; for example, for the first one I would say explain the following reason why hourly pay does not result in motivated employees: Reason 1: You get what you pay for, or Reason 2: consequences. In other words you don't have to memorize the two reasons, but you do have to be able to explain each one.

Reason 1: you get what you pay for. First, if you pay by the hour you are paying for hours worked, not performance. Economically, it makes sense for employees to take as much time as possible to complete their work -- the more hours, the higher the pay. In other words if you pay

for hours you get hours - exactly what you pay for!! This is particularly true if workers are given the opportunity to work overtime - for which employees receive 150% of their regular salary. Most companies experience a large surge in overtime in the weeks that precede Christmas - surprise, surprise!

Reason 2: consequences. Second, in hourly wage systems, there are very clear consequences for performing below a minimally acceptable performance level - criticism from the supervisor, threat of termination of employment - but no clear consequences for performing above that minimum. Thus, hourly wage systems tend to support minimally acceptable performance levels.

3. A. Based on the following material, explain, according to Skinner, what maintains performance under hourly wage systems (the bold faced material is the important part for you to focus on). Do not forget to include the role of the supervisor - this is a very important part of the analysis, because it is the supervisor that provides the negative reinforcement contingency.

Many people object to monetary incentive systems because they are "aversive." And, there is no doubt that they can be when implemented incorrectly, which many are. In *Contingencies of Reinforcement*, Skinner (1969) described the aversive contingencies commonly associated with hourly wage systems. He stated:

No one works Monday morning because he is reinforced by a paycheck on Friday afternoon. The employee who is paid by the week works during the week to avoid losing a standard of living which depends upon a weekly wage. A supervisor who can discharge him is an essential part of the system. Rate of work is determined by the supervisor (with or without the pacing stimuli of a production line), and special aversive contingencies maintain quality. The pattern is therefore still aversive. (p. 18).

He goes on to say: "Somewhat better contingencies are available under schedules of reinforcement based on counters rather than clocks" (p. 19), referring specifically to piece rate pay systems.

- B. Now, based on the following material, explain why Skinner believes that incentive systems may be "better contingencies" in the sense of not being as aversive as hourly pay.

Skinner readily acknowledges that piece rate pay systems have been misused, nonetheless, he notes in *About Behaviorism* that incentive systems may **evoke feelings of confidence, certainty of success, and enjoyment arising from a sense of mastery and effectiveness, and interest in the job as occurs when behaviors are frequently reinforced.**

Note that the evocation of feelings is a respondent, not an operant relation. I'll talk more about this in lecture.

4. Not for the exam, but I want to address/explain some of the popular variable pay plans that are being used in business and industry right now. Aamodt mentions some of them in Figure 9.2 on page 342 and describes some, but not all of them in the subsequent material.

I would have divided things up a bit differently, but in Aamodt's defense this is an undergraduate text in IO psychology and not a compensation text. Nonetheless, I believe it is important for you (and from a behavior analytic perspective) to know that there are really three categories of variable pay plans, not two: individual plans, work group/team plans, and organizational plans (Aamodt leaves out group/team plans).

A. Individual plans:

1. Tenure-based: An individual's base pay is increased based on length of service. This is a very popular plan with unions. As Aamodt indicates, this is not a performance-based plan.

2. Pay for skill or knowledge. An employee's base salary is increased based on the number of tasks or skills that he/she can do, regardless of the particular job he/she performs. Typically, employees receive higher pay for learning other jobs within the organization -- this creates a much more "flexible" workforce for the organization. But again, this is not performance-based.

3. Merit pay: See Aamodt, page 345. Merit pay is the most common type of pay raise system and almost always based on annual, subjective performance ratings of supervisors. The raise is typically given as a percentage of base pay. There are some data suggesting that while merit pay may increase performance for a short period of times, the gains seem to be short-lived. The problem with merit pay relates primarily to the fact that it is based on subjective performance appraisals. Thus, the main problem is connecting the subjective appraisals to the merit increase. Because we have already dealt with that in this class in the performance appraisal unit, I am not going to talk about that in this unit

4. Special recognition bonus: While these are individual recognition awards, in most cases, employees do not know the distribution method in advance or what criteria will be used to determine whether or not they will receive a bonus. Bonus plans are administered at the discretion of management. Bonuses are usually provided annually.

5. Employee suggestions: Some companies give employees a monetary reward based on their suggestions about how to improve performance/productivity. Some of these programs tie the amount of the monetary award to the amount the company saves given that it accepts and implements the suggestion.

6. Commissions: These are common in sales. Sales representatives are given a percentage of the cost of the item when they sell the item.

7. Piecework: See Aamodt's section "Pay for Performance" on page 344. He actually mentions Union National Bank, which is really cool. Only a few companies actually use "straight" piecework pay. Most now offer employees a base salary and then piecework pay for above standard performance (which is what Union National Bank did). The incentive money is distributed in the regular paychecks of employees and thus is distributed weekly or biweekly.

B. Group incentive plans

8. Group incentive plans. These plans are typically implemented at the departmental level or sometimes at the "work unit" level (for example, work teams of five to ten). Employees typically receive a guaranteed hourly wage and can earn additional incentives when the group's productivity exceeds some predetermined level. All employees in the group typically receive the same amount of money, but in some cases the payouts are based on an individual's contribution to the group's performance or based on a % of base salary. For example, all employees get 5% of their base pay in incentives - the actual amount earned will vary depending upon the base pay, therefore. The incentive money is added to the regular paycheck of the employee and thus received weekly or biweekly.

C. Organizational plans

9. Profit-sharing. See Aamodt, page 346. One thing Aamodt doesn't mention is that profit-sharing payments are typically made annually. Also, notice that while Aamodt indicates that

profit-sharing results in greater employee commitment, he does not indicate that profit-sharing results in better performance. I'll come back to this later.

10. Gainsharing. See Aamodt, page 346. Note two things in 346,6: (a) gainsharing has been associated with improvements in productivity and (b) it works best when there is not a long delay between performance and the financial payoff. That means that annual payoffs are not nearly as effective as monthly payoffs (that should not surprise us as behavior analysts).

11. Stock options (also sometimes called employee ownership plans). See Aamodt, page 347.

12. Bonus or lump sum payments. Bonus plans are different from profit sharing and gain sharing because, in most cases, employees do not know the distribution method in advance or what criteria will be used to determine whether or not they will receive a bonus. Bonus plans are administered at the discretion of management. Bonuses are usually provided annually at the end of the year.

Bucklin & Dickinson article

5. 45,1-46,0. Abstract. Note the summary of the conclusions - the material beginning with "Taken together..." and the following sentence. As I mentioned in an earlier unit, these conclusions are the same ones that Hantula (2001) arrived at when he reviewed the effects of studies of schedules of reinforcement on organizational performance – whether or not the consequence was money.
 - A. The abstract is too wordy. I am going to summarize the three main conclusions of our review in lecture (and in the ppt): Learn these three conclusions.
 - B. Be able to state the important implication of these conclusions which follows: *It appears, therefore, that you don't have to worry a lot about the details of how money/consequences are related to performance – as long as they ARE related in some type of ratio schedule, delivered fairly frequently, and supported by an on-going feedback system.* This is a VERY interesting point that is not commonly known in our field.
6. 49,1 Be able to state three reasons why it is not surprising from a behavioral perspective that profit-sharing has **not** been shown to increase productivity. I will talk about these in lecture and clarify them, providing additional information. Learn this material from lecture and the ppt.

The three reasons I am going to focus on are: (a) profitability is based on the aggregate performance of all members of the organization - the explanation for this one is actually provided later on page 51,2; (b) profitability is based on organizational factors that are clearly outside the control of employees such as mergers, investment of funds in research, etc., and (c) the fact that profit sharing bonuses are distributed annually or placed in the employee's retirement account. The fourth reason (actually, the third one given in 49,1) - economic measures - is not as important as these three, so I am not going to cover it in this class, although it is relevant.
7. 52,3-53,0. Not for the exam - but note that organizations do adopt variable pay plans for reasons other than to increase employee productivity. Early on in my career, I was always puzzled about why companies adopted some of the other types of plans - this material explains it.

8. 56,1 Not for the exam, but note the analysis of the complexity of pay systems - clearly, I was responding to molar analyses and those who fail to recognize the multiple contingencies that influence and affect performance at work. Organizational settings and hence behavior is not simple and *cannot* be explained simplistically.
9. 61,0 Fill in the blank: Historically, compensation experts have claimed that performance would not be affected by incentives that were less than (what percentage - and what does the percentage refer to), nor would performance be affected by percentages that were greater than this.
10. 72,1 (next to the last sentence on the page). What was the actual (not planned) *lowest* percentage of incentives examined by Frisch and Dickinson?
11. 73,1.
 - A. What relationship was found between the amount of pay earned and the percentage of incentives?
 - B. State two reasons why these data are important (the last sentence in the paragraph sums it up nicely)?
12. 73,2. Why were the results of Frisch and Dickinson "particularly interesting?"
13. 77,2. Not including 0%, what was the lowest percentage of incentive examined in LaMere et al.'s field study with truck drivers? What was the highest percentage (feel free to round the high percentage to 10%).
14. 80,1 Not for the exam, but notice the length of each of the phases. We collected data for about four years.
15. 84,1. What consistent results were obtained by all five studies that examined the effects of the percentage of incentive pay on performance? Surprised? We were!
 Not for the exam. Contrasting results were reported by Oah & Lee (2011) in a study published in *JOBM*: workers were more productive when they earned 100% of their pay in incentive pay vs. 10%. I think there are two reasons he may have found that.
 Oah, S., & Lee, J. (2011) Effects of hourly, low-incentive, and high-incentive pay on simulated work productivity: Initial findings with a new laboratory method. *Journal of Organizational Behavior Management*, 31(1), 21-42.
 First, participants in the 10% incentive group actually earned only 1.6% of their total pay in incentives. 2 of 4 performed the same when given 1.6% incentives and hourly wages: when group data for all were statistically analyzed, no difference between 1.6% and hourly wages. It's likely 1.6% incentives was simply too low to affect performance: functioning the same as hourly pay. Thus, it's not surprising there was a big difference between the 100% incentives and 1.6% incentives (which was designed to be 10%).
 Second, he used an alternating treatment design and my guess is that some of the differences may be due to contrast effects. We have found such contrast effects when we have used within-subject designs. I may talk more about these types of methodological issues in lecture. If I don't (or even if I do), I strongly recommend that you read the following chapter:
 Komaki, J. L., & Goltz, S. M. (2001). Chapter 4. Within-group research designs: Going beyond program evaluation questions. In C. M. Johnson, W. K. Redmon, and T. C. Mawhinney (Eds.), *Handbook of organizational performance: Behavior analysis and management* (pp. 81-137). New York: The Haworth Press.

16. 107,1. State two idiosyncratic factors in a work setting that could account for differences that occur when employees are exposed to various ratio schedules of reinforcement. Give one of the examples from the ms.
17. 111 (sentences beginning "Subjects in the accelerating pay condition earned....").
- A. What were the results of the Oah and Dickinson study with respect to the amount of money earned and the effects of linear vs. accelerating piece rate pay? Do NOT learn the average amount earned by Ss in each group - a general summary statement will do here.
- B. Why are these results important? (conclusions on the ppt slide)
18. 123,2. What two factors appear to affect ratings of satisfaction with various types of incentive pay plans?
19. 126,0-127,0 In general, to date, what do all of the data suggest regarding the generalizability of laboratory findings to actual work settings? This is a **very** important point. Many individuals question whether the results from the laboratory (particularly when college students are used as subjects) are relevant to the work place. To date, the data suggest that the results do, indeed, generalize, if care is taken to include the critical variables in laboratory simulations.

Not for the exam but the following references/studies support the generality of lab studies. Remember this if you conduct a lab study and someone questions your study! And yes, you can probably tell this is a pet peeve of mine. Given the literature and the consistent findings, it irks me that people in our field still question the legitimacy of lab studies.

Anderson, C. A., Lindsay, J. J., & Bushman, B. J. (1999). Research in the psychological laboratory: Truth or triviality? *Current Directions in Psychological Science*, 8(1), 3-9.

Berkowitz, L., & Donnerstein, E. (1982). External validity is more than skin deep: Some answers to criticism of laboratory experiments. *American Psychologist*, 37, 245-257.

Garbers, Y., & Konradt, U. (2014). The effect of financial incentives on performance: A quantitative review of individual and team-based financial incentives. *Journal of Occupational and Organizational Psychology*, 87(1), 102–137. doi:10.1111/joop.12039

Jenkins, G. D. (1986). Financial incentives. In E. A. Locke (Ed.), *Generalizing from laboratory to field settings* (pp. 167–180). Lexington, MA: Lexington Books.

Jenkins, G. D., Gupta, N., Mitra, A., & Shaw, J. D. (1998). Are financial incentives related to performance? A meta-analytic review of empirical research. *Journal of Applied Psychology*, 83(5), 777–787. doi:10.1037//0021-9010.83.5.777

Latham, G. P., & Lee, T. (1986). Goal setting. In E. A. Locke (Ed.), *Generalizing from laboratory to field settings* (pp. 101–117). Lexington, MA: Lexington Books.

Locke, E. A. (1986). Generalizing from laboratory to field: Ecological validity or abstraction of essential elements? In E. A. Locke (Ed.), *Generalizing from laboratory to field settings* (pp. 3–9). Lexington, MA: Lexington Books.

Mitchell, G. (2012). Revisiting truth or triviality: The external validity of research in the psychological laboratory. *Perspectives on Psychological Science*, 7(2), 109–117.

Honeywell-Johnson et al. article.

20. 89, 1. Conceptually, (a) why might individual incentives control performance more than small group monetary incentives; (b) on the other hand, why might small group incentives control performance as well as individual incentives?
21. 90,2, last sentence. Summarize the results of studies with respect to the comparison of the effects of equally-divided group incentives and individual incentives. Provide the range of the number of subjects in the groups that were examined which you can get from Table 1 (for the Turkow et al. study, use the average group size). This is important.
22. 90,3. When would individual performers be likely to perform the same under individual and group monetary incentives and why? When would performers be likely to decrease their performance under group monetary incentives and why?

Not for the exam: What are the implications of these results for team/group projects in classes and/or in business settings?

23. 100, 2nd col, 2. What were the results of the study? What do these data indicate?
24. 100, 2nd col, 2.
 - A. Which of the following three pay systems did all four high performers prefer: Hourly pay, individual incentive pay, group incentive pay?
 - B. Which of the following three pay systems did the majority of participants (three out of four) find to be the most stressful? Hourly pay, individual incentive pay, group incentive pay?

Not for the exam: The above preference data are interesting. Many people would probably assume that the individual incentive pay would be seen as the most stressful, yet three of the four found the group pay system to be the most stressful. Also, in spite of the fact that three of the four participants found the hourly pay to be the least stressful form of pay, all four preferred the individual incentive pay.

25. Again, not for the exam: We have confirmed the effects of group incentives on the performance and satisfaction of high performers in a subsequent study conducted by Dr. McGee (as her dissertation). I prefer the Honeywell-Johnson article for this class because Dr. McGee's was rather complicated and also used a new type of statistical analysis developed by Dr. Huitema specifically for within-subject data. Both the study and the analyses are rather difficult to understand without intense study – more study than I thought was appropriate for this unit. It was published in the *Performance Improvement Quarterly*, which is the research journal of ISPI (ISPI funded the study rather handsomely). (Also, it really is too long – the ISPI reviewers required us to justify the fact that we conducted a laboratory study and also used a within-subject design, which did not “go over” particularly well with some of the reviewers.)

But, just in case you are interested here is the reference:

McGee, H. M., Dickinson, A. M., Huitema, B. E., & Culig, K. M. (2006). The effects of individual and group monetary incentives on high performance. *Performance Improvement Quarterly*, 19(4), 107-130.

Garbers & Konradt: I wanted you to have this study even though I am not going to ask many questions over it. The results confirm a number of points about incentives that I feel are very important, and it is the most recent meta-analysis of incentive studies.

26. 102, Abstract

A. How many individual incentive studies were included in the meta-analysis? (feel free to round to 115).

B. How many team-based incentive studies were included in the meta-analysis?

I am having you learn this to point out how few studies really have examined the effects of incentives on performance. Although you may think these numbers are significant – they aren't. I address this in my ppt introduction to this topic.

27. 108, 3-4.

A. Describe what is meant by both “equitably-distributed” team awards and “equally-distributed” team awards.

B. Historically, what has the empirical literature indicated about which type leads to higher increases in performance?

C. Which type of team-based incentives resulted in higher performance in the current study?
102, Abstract

28. 109, 2. Why might the effectiveness of incentives decrease as the complexity of the task increases?

29. 102, Abstract; 109, 2; and 113, 2. Not for the exam, but keep in mind it is very important to read a study carefully. The results of this meta-analysis, contrary to the results of other reviews, indicated that incentives affected complex tasks more than less complex tasks. The reason for that is the way they coded “complexity.” If you look at 113,2, they used a very different coding system than most studies. They did this to take into account the team-based type of performances. However, I am not comfortable with their coding system; thus, I would argue that you should **not** use this article as support for the statement that incentives affect complex tasks more or as much as less complex. I still hold the position that incentives have been shown to affect rate-oriented and less complex tasks more than complex tasks.

30. A. 116, 1. What were the results in regards to the effectiveness of team incentives and size of team?

B. Based on the information below, be able to state why as the team size increases, we would expect any type of group-based reward/contingency to become less effective. I have mentioned this earlier in this class – and again, this is not just related to monetary incentives; it is relevant to any type of team-based incentive. The authors do cite a paper I coauthored with Honeywell-Johnson on page 119,2, but I am not comfortable with the way they “translated” what we said. So, learn the following instead.

In small groups, any one individual has a lot of influence over the performance of the entire group; that influence decreases as the size of the group becomes larger.

31. 118, 1.

A. What were the results in regards to the effectiveness of individual incentives and team-based incentives in field vs. laboratory studies?

This next part will not be for the exam, but don't skip 118B below: If you read 111,1-5, you will see that this has historically been the case. Again, not for the exam, but an important implication of this is that the results of lab studies underestimate the effects that incentives

have in the real work place. Thus, these data actually support the generality of lab results: if you get good results in the lab, they are likely to be larger in actual settings!

B. Now turn to 111,3 and 111,5. Historically, what have reviews indicated about the effectiveness of incentives in field vs. laboratory studies?

Not for the exam, but interestingly, they neglected to cite an earlier study by Jenkins (1986) that reported the same thing: Effects were larger in field studies.

Not for the exam, but there are at least two possible reasons for these results: (a) in an actual work setting, employees who are incented are typically skilled employees, thus learning/acquisition does not cap performance to the same extent as in laboratory studies; and (b) in work settings, the incentives are tied to other organizational rewards (for example, recognition, promotions, etc.). Can you think of any others?

THE END

Unit 7: Interventions in Human Service Settings

1. Wine, B., Gugliemella, C., & Axelrod, S. (2013). An examination of generalized-conditioned reinforcers in stimulus preference assessments. *Journal of Organizational Behavior Management*, 33(4), 244-251.
2. Richman, G. S., Riordan, M. R., Reiss, M. L., Pyles, D. A. M., Bailey, J. S. (1988). The effects of self-monitoring and supervisor feedback on staff performance in a residential setting. *Journal of Applied Behavior Analysis*, 21, 401-409.
3. Parsons, M. B., Cash, V. B., & Reid, D. H. (1989). Improving residential treatment services: Implementation and norm-referenced evaluation of a comprehensive management system. *Journal of Applied Behavior Analysis*, 22, 143-156.
4. Green, C. W., Reid, D. H., Perkins, L. I., & Gardner, S. M. (1991). Increasing habilitative services for persons with profound handicaps: An application of structural analysis to staff management. *Journal of Applied Behavior Analysis*, 24, 459-471.
5. Green, C. W., Reid, D. H., Passante, S., & Canipe, V. (2008). Changing less-preferred duties to more-preferred: A potential strategy for improving supervisor work enjoyment. *Journal of Organizational Behavior Management*, 28(2), 90-109.

This set of articles represents a rather odd collection of articles. Although I am going to talk about Carbone's monetary incentive program for staff, I chose the other articles because they represent interventions that can be implemented with little cost to the organization. Over the past few years, I have had several students in the behavior analysis program take the class, and they suggested that I include some articles that addressed low-cost effective interventions that could be used in human service settings. Thus, I have done that.

Wine et al. article

The first article describes some initial research examining different types of preference assessments to identify consequences that can be used as rewards/reinforcers. Although money was identified as a preferred consequence, other types of things were also identified which would not cost organizations much to use. Thus, I think this line of research is interesting and has promise. Although these authors did not actually test to ensure the items identified as preferred actually functioned as rewards/reinforcers, a subsequent study has done that. Some caution is warranted, however. In the Wine, Kelley, & Wilder study referenced below, employee preferences changed over time. However, the size of the consequences was small (\$5.00 or less in value). Nonetheless, I suggest you keep watching this line of research to see what happens. I am going to talk about the following two studies in lecture. If you are interested in looking at those other articles, the references are below.

Wine, B., Reis, M., Hantula, D. A. (2014). An evaluation of stimulus preference assessment methodology in Organizational Behavior Management. *Journal of Organizational Behavior Management*, 34(1), 7-15.

Wine, B., Kelley, D. P., III, & Wilder, D. A. (2014). An initial assessment of effective preference assessment intervals among employees. *Journal of Organizational Behavior Management*, 34(3), 188-195.

Richman et al. article

Also, I like the Richman et al. article for several reasons: (a) the relatively simple, but effective measurement system; (b) it demonstrates what we know about in-service training – that it is NOT effective; (c) as with the Gaetani & Johnson article in U5, it raises the question of whether self-monitoring alone is an effective intervention over time.

Parsons et al., Green et al. (1991) and Green et al. (2008)

If you are interested in staff management, I would be remiss if I did not encourage you to read *everything* you can get your hands on that has been published by Denny Reid, Marsha Parsons, and Carolyn Green; both their staff management publications and their clinical publications. I have been amazed over the years at the consistently high quality, innovative things they have done.

Also, in the past I have been asked about the effectiveness of general performance management workshops for staff as an intervention. I have looked at that literature and it is not encouraging, even when the staff management training programs are done well. The literature clearly suggests (at least at this point) that the best approach is to target specific behaviors/performances of either the staff or the clients, and implement a staff management program based on the tried and true PM procedures that we have covered in this class (feedback, goal-setting, consequences).

Below are two articles that assessed the effectiveness of performance management training programs for staff. Both programs were top notch, done by top-notch behavior analysts. And while both were somewhat effective, if you compare the results to the results of the types of interventions I described above, they just are not as effective. I am just providing them for you in case you would like to read them yourselves. Also, Nicole Gravina's dissertation (which, to my knowledge, has not been published) assessed the long-term benefits and generality of an excellent workshop conducted in a human service setting by Dr. Austin, and the results were clear: there were few remnants of the workshop training 3-4 years later. And, the workshop was conducted in a setting that was managed by doctoral level behavior analysts. Thus, if workshop-training effects will not sustain in this type of setting, the "prognosis" isn't good for sustainability in a less "friendly" and supportive setting. Of course, the challenge is to perhaps come up with procedures that will make such workshops effective; but from a practice perspective, at the current time, your time and effort will be better spent targeting specific behaviors/performances of staff and clients and building a staff management intervention around that.

Recommended articles/book:

Fleming, R. K., Oliver, J. R., & Bolton, D. M. (1996). Training supervisors to train staff: A case study in a human service organization. *Journal of Organizational Behavior Management*, 16(1), 3-25.

Methot, L. L., Williams, L. W., Cummings, A., & Bradshaw, B. (1996). Measuring the effects of a manager-supervisor training program through the generalized performance of managers, supervisors, front-line staff, and clients in a human service setting. *Journal of Organizational Behavior Management*, 16(2), 3-34.

Only four years ago was an article published that reviewed staff training and management programs in human service settings (at least that I was satisfied with). The reference is below. I am not using it because it basically says what you should already know at this point: that staff training is typically done poorly in human service settings and that training by itself is not sufficient – you must have a multi-component staff management system. **Although I am not**

using it, I strongly recommend that you remember this article exists and recommend it to managers/supervisors in human service settings. They will benefit a lot from it. The article is an “easy read.”

Reid, D. H., O’Kane, N. P., & Macurik, K. M. (2011). Staff training and management. In W. W. Fischer, C. C. Piazza, & H. S. Roane (Eds.), *Handbook of applied behavior analysis* (pp. 281-294). NY: The Guilford Press.

Another resource for you. The following book/manual is a superb manual that provides detailed training procedures for staff. Unfortunately, it costs \$300.00. Our library does have it, however. I strongly recommend that you consult this book/manual if you are ever in a position to train staff in human service settings.

Reid, D. H., Parsons, M. B., Rotholz, D. A., & Braswell, B. A. (2007). *Positive behavioral support training curriculum and trainee resource guide*. Washington, DC: American Association of Intellectual and Developmental Disabilities.

OK – finally to the study objectives.

Once again, the number of study objectives may seem daunting, but many are not required for the exam. I tried to focus on the main reasons/points of each article, without getting too caught up in the methodological/experimental procedures.

Intro to staff management, ppt

1. ppt and material below. State the percentages that (1) developmentally disabled consumers and (2) staff spend in off-task activities in residential and group homes.

Research has consistently shown that developmentally disabled consumers who live in residential facilities and group homes spend ~65% of their time off-task (that is, not engaged in any meaningful or leisure activities) and staff spend ~45% of their time off-task. This is why performance management is so needed in human service settings!

References for the above: Bensberg & Barnett (1966); Quillitch (1975); Iwata et al. (1976), Green et al. (1991). Note the span in the time frame! The data have been consistent over decades.

2. ppt. State the differences between human service professionals and professionals in business and industry that help account for staff management problems.
3. ppt. State three reasons why human services professionals have not been trained in staff management/OBM.

Wine et al. article

4. 245, 2. Explain two reasons for identifying rewards other than money. Include, but do not restrict, your answer to some specific examples. That is, include the material in the sentences beginning “Money may not be available....” and “In addition...”
5. 246, 0. State the difference between the items included in the first set and the second set.
6. Table 1 and Table 2.
 - A. How many of the items included in the first set were in the top 5 for both the survey and ranking procedure? This is good...It means the results were pretty consistent across the two assessment methods.
 - B. State three items other than money that were in the top 5 for both assessment procedures.

7. Table 1 and Table 2.
- A. How many of the items included in the second set were in the top 5 for both the survey and ranking procedure? Again, this is pretty good.
8. 248, 2. Not for the exam, but I disagree with the authors that the results are counterintuitive for the first set of items. Some staff members rated leaving work early as preferred to \$10.00 cash. Hence, you are “pitting” the reinforcing value of the \$10.00 against escape from work and access to other non-work reinforcers. I don’t see this as being counterintuitive: it just indicates the reinforcing value of the two. It does not mean that money per se is less reinforcing. What if \$20.00 cash was offered instead of leaving work early? What if \$30.00 in cash was offered instead of leaving work early? One of the problems with assessing money as a reward/reinforcer with other items is equating the reinforcing value of the two – that is why the results from the second set of items is interesting.
9. 249, 2. Explain why gift cards and similar items that have the same cash value as money may have more reinforcing value than the same amount of cash.
- This is a **very** common rationale used when individuals argue in favor of tangible rewards and gift cards versus cash. I, by the way, have never agreed with it, but interestingly, to my knowledge, no research study has examined this issue. I will talk about this more in lecture. Also, another interesting question would be to examine whether gift cards to particular stores/places hold their reinforcing value over time in comparison to cash. I would argue they might not. How long will gift cards for an electronic store or donut store remain reinforcing? Think of yourself repeatedly getting these – let’s say once a week for six months or so?
10. ppt and lecture. In a subsequent study, Wine, Reis, & Hantula (2014) compared three preference assessment procedures: survey, ranking, and multiple stimulus without replacement. They assessed the procedures by (a) determining whether the items identified actually functioned as reinforcers for a work task and (b) assessing participant satisfaction with each method. I should mention that, perhaps unfortunately, this study did not offer participants cash; thus we don’t know whether the other items would have functioned as effectively as cash.

For the exam, based on the material below the study objectives:

- A. State which of the three assessment methods identified the greatest number of potential reinforcers and which identified the smallest number of potential reinforcers.
- B. All of the items identified by the survey functioned as rewards/reinforcers for the work task for all three participants. State two reasons why these data are interesting/important.
- C. Rank order the three assessments in terms of the extent to which the participants liked them.

Across the three participants, the survey identified more items that were potential reinforcers, followed by the ranking. The MSWO identified many fewer items. All of the items identified by the survey functioned as rewards/reinforcers for the work task. That is important for two reasons: (a) the survey reliably identified items that did function as rewards/reinforcers for all three participants and (b) both the ranking and MSWR missed items that ultimately functioned as rewards/reinforcers.

Additionally, participants liked the survey better than the other two methods, and considerably better than the MSWO, which was rated the lowest.

Clearly, based on the above, the survey appeared to be the best of the three assessment procedures in terms of identifying items that functioned as reinforcers and in terms of participant preference.

Not for the exam: but in a second study, these authors again found that both the survey and ranking assessment procedures identified items that did function as reinforcers and also that they correctly identified a low preference item that subsequently did not function as a reinforcer. Again, this is good news. It appears as though both surveys and rankings are a reliable way to a priori determine what will and what will not function as reinforcement.

11. ppt and lecture. OK, so far so good with reinforcement surveys and rankings... However, there is a caveat that needs to be further examined. In another subsequent study, Wine, Kelley, & Wilder (2014) examined the stability of survey and ranking assessments over time for eight items. Again, unfortunately, cash was not included as an item in the assessment. Also, unfortunately, the actual reinforcing value was not assessed. I am assuming this study will be conducted and published soon.

For the exam, based on the material below the study objectives:

- A. What assessment intervals were examined?
- B. The assessments were stable for which of the intervals?
- C. Out of (fill in the blank) items, preference shifts from high to low or low to high were found for a range of (fill in the blank) items.
- D. What is the main implication of the results of this study?

Ten employees completed survey and ranking preference assessments for eight items at 1-week, 2-week, 3-week, and 4-week intervals. Changes in preferences from high to low and low to high were examined. The survey consisted of a 5-point rating scale. Shifts from high to low were defined as changes in ratings from a 3 or 4 to a 0 or 1. Shifts from low to high were defined as changes in ratings from a 0 or 1 to a 3 or 4. For the ranking assessment, shifts from high to low were defined as changes in ranking from a 6, 7, or 8 to a 1, 2, or 3. Shifts from low to high were defined as changes in ranking from a 1, 2, or 3 to a 6, 7, or 8.

For both types of assessments, preferences were stable **only for the 1-week interval**. Out of the 8 items, preference shifts from high to low or low to high were found for a range of 2-5 items across both assessment methods and the other three intervals.

The main implication is that preference for various (low cost) tangible items shifts over short intervals of time, and thus what functions as a reinforcer may as well. Reinforcement-based programs may be undermined if such preference shifts are not taken into account.

Not for the exam: But, food for thought: Given the results of this study, and the fact that cash could have been used to purchase all of the items used in this preference assessment, might cash be the best bet? Notice that this study did not examine the types of items included in the initial study: leaving work 40 minutes early, having an additional 20 minutes for break, taking consumers on a field trip, etc. It would be interesting to determine whether preference for these type of noncash, “nonpurchaseable” items would shift as well (OK, I know nonpurchaseable is not a word, but I couldn’t think of a word that would fit well here....)

Richman et al. article

12. 402,3-402,4.

- A. What two general categories of behaviors were recorded?

B. For the first category, how would a person be scored if a staff member was in the correct location with the appropriate materials, but was reading, drinking coffee, or interacting with another staff member - that is, not actually conducting the training?

C. For the second category, how would a person be scored if the staff member was engaging in an appropriate activity, but not the one that happened to be scheduled for that particular time period? In other words how would a person have been scored if he/she were doing one-on-one training when a group activity was scheduled?

These are very nice (and relatively simple measures of behavior): always a plus in any study. Many studies in Human Service Settings have VERY complex measures of behaviors, unlike the current one. That is one of the reasons I like this study so much. Remember, if the measurement system is too complicated and takes a lot of time, there is less of a chance that people will actually do it.

13. 402,5. Not for the exam, but note the very nice HSIRB procedure related to what the staff were told about the use of the data that were to be collected during the “special project”!

14. 403,3. Not for the exam, but some type of scheduling system is used in a large number of interventions in human service settings – and it is a very effective procedure as well as one that is relatively easy to implement. I return to this issue in the Parsons et al. article.

Anyway, The one used in this article is one of the best I have seen.

Each staff member copied down his/her schedule (in 1/2 hour blocks) onto a card. *The E initialed each card. Staff members initialed each activity as they completed it or wrote an explanation of why they couldn't complete it. They turned their cards in at the end of the day.*

15. 403,5. Not for the exam, but when and how many times did supervisors give feedback to each direct care staff member?

16. 404,3 and graph on page 405. Baseline data were fairly low and inconsistent. What effect did the in-service have on the behaviors of staff? Whenever researchers have evaluated the effects of in-service training or staff training memos, this IS the typical result.

17. 404,5. Self-monitoring increased the performance of staff members substantially.

A. Why, then, was supervisory feedback added? That is, what happened to the performance of 5 of the 10 staff members during the self-monitoring phase?

B. What are the implications of these data? They suggest that self-monitoring alone may not be effective long-term for many employees (50% in this study).

18. 404,7 and 408, last sentence in article. Not for the exam but note that generalization occurred and also that the procedures were still in effect at that facility 2 years after the completion of the research and also had been adopted at 12 other facilities around the state.

Carbone Staff Incentive System: from the ppt presentation

19. What are the two components that incentives/bonuses are based on?

20. State any three of the five reasons why this system is so “cool.” You may not realize the importance of the fourth reason on the ppt slide; this is actually very important.

21. A. What is the criterion for earning the bonus/incentive for training?

B. What happens if instructors do not meet the criterion?

Parsons et al. article.

In this article, I am going to point out some very useful procedures that could be implemented in any human service setting although this study was conducted in five group homes for the developmentally disabled. Quite frankly, this is the best study I have seen of a large-scale OBM intervention in a human service setting. It can be used as a model for any human service setting, although, clearly some of the details of the procedures would have to be modified.

22. 146, 2nd col, 1. Not for the exam, given the earlier study objective from the Reid et al. article that addressed this, but, note the percentage of resident behavior that was off-task. And, on average what percentage of resident behavior was active treatment?
23. 148, 2nd col., 1- 149, 1st col, 0. **Not for the exam.** There were essentially three main components to the “structure/scheduling” intervention.

Prior to the intervention, tasks for targeted times during the day were designated with terms like “leisure.” Notice how this was changed during the intervention.

Again, notice the importance of scheduling activities and providing clear task clarification for the direct care staff – this is a recurrent theme in OBM interventions, and one we saw in earlier in the Richman et al. article. This should always be a first step.

24. 149, 1st col., 1. What three benefits from a PM perspective are derived from assigning staff to specific responsibilities/roles? Answer: task clarification, decreased conflict with other responsibilities, and individual accountability – by which I mean, individuals could be identified, their performance measured, evaluated, and consequated.
25. 149, 2nd col., 1.
- A. How often did the cottage supervisor (or assistant supervisor) observe each staff person using a checklist of behaviors relevant to each job role?
- B. What procedure was used to verify that the cottage supervisor not only observed the staff person’s behavior, but provided *feedback to the staff person immediately afterward*? Note that this is virtually the same procedure that was used by Wilk & Redmon in their study. You should remember this procedure. It is an excellent procedure to insure/measure that the observations/feedback are being provided by supervisors – and yet is NOT labor intensive for the researcher/consultant.
26. 149, 2nd col., 2-150, 0.

Not for the exam, but note the very important and nice systems approach here. (a) Each cottage supervisor observed each staff member at least once a week. (b) The area director reviewed the observation and feedback forms for each cottage supervisor weekly. (c) The facility program director reviewed the graphs displaying the % of intervals during which active treatment was being conducted for each unit weekly and sent those to the area director with comments. So you have four levels of organizational employees involved here: (1) cottage staff, (2) cottage supervisors, (3) the area director, and (4) the facility program director.

When people implement OBM procedures with staff and supervisors, they sometimes “forget” that someone has to monitor and give feedback to them as well. The procedures employed in this study are *excellent*.

Last year, one of the students asked me to address maintenance. This study provides an example of what you need to do in order to get PM interventions to maintain – the supervisors/managers must be held accountable for their PM practices, and they must be

evaluated on them – not only on client goals. That means that the top person in the organization must create a system of accountability for good PM practices at every level of the organization. In most human service settings, only client services and goals are emphasized in the management system. That will not sustain/maintain PM practices.

By the way, this is most likely the primary reason why general staff management training programs have not sustained. Interestingly, in some business organizations, ADI has included a measure of “number of PM projects in place” on the Performance Matrix for supervisors/managers.

27. 150, 2nd col., 1. Not for the exam, but initially I was confused about the specific number of times that the treatment was implemented, but if you turn back to page 148, 1st col, 1, you will see that they implemented the treatment for a total of 23 time periods, across the five buildings, which would also mean for different staff members. On the graphs in Figure 2, the numbers in the boxes are the time periods (i.e., 3:30 – 5:30 pm, 5:30-7:00 pm, etc.).
28. 150, 2nd col., 2. Explain, as I do in this study objective, the very nice contribution that the normative data that permits comparison with other agencies adds.

Most studies would simply have reported baseline data, which would have been sufficient, but *with the across-agency normative data, these group homes could not only show that they had improved, but that they were doing considerably better, for the most part, than other state residential facilities.* (The original normative data was collected for 22 living units in six state facilities in three states – see page 144, 2nd col., 1). This is especially nice since once reason that the study was being conducted was because of the impending state Medicaid review team visitation.

29. 154, 1st col., 0. Be able to state why, *from a staff perspective* (and hence reasonable management expectation), it was important to collect normative data. Include in your answer “given typical staff-to-resident ratios.”

This point is important. The agency can only hire a certain number of staff due to budgetary constraints – and usually the agency is understaffed. Given the number of staff, it is unrealistic to assume that residents will always be in active treatment and never be off-task. Thus, it becomes important to determine what percentage of intervals *is* realistic.

30. 154, 1st col, 2-154, 2nd col, 0. Not for the exam, but notice how many total staff and residents actually participated in this management procedure. Again, this is impressive.
31. 154, 2nd col.,1 – 155, 1st col., 0. Again, not for the exam, but I completely agree with what the authors say about the likely reasons for the maintenance of the initial behavior changes – that is why I focused on these in the above study objectives.
32. 155, 1st col., 0. From an applied perspective, what is the disadvantage of targeting and focusing on *staff* behavior rather than *resident* behavior? And, what, therefore, may be one important result of focusing on resident behavior?

Not for the exam: It’s interesting, but I never thought of the fact that individuals may prefer to have their accomplishments monitored rather than their behavior (resident behavior would be the equivalent of measuring an “accomplishment” for someone in business).

This would be an interesting study for someone to do; that is to compare a staff monitoring system where the staff behavior is observed, measured, plotted and consequated with a system where the resident behavior is observed, measured, plotted and staff consequated on

that basis. An important component of the study would be to compare the extent to which the staff found the two systems acceptable.

Babcock et al. conducted a very interesting study with nurses that found that nurses improved their performance *when given feedback on their assistants' behavior in contrast to when they were only given feedback on their own performance*. I don't know of any other study that has examined this.

In that study, Babcock et al. measured the number of times the nurses gave feedback to their assistants about wearing gloves when handling soiled linens in a head-injury treatment center (to prevent HIV infection). The researchers first gave the nurses feedback on the number of times they gave written "feedback slips" to their assistants. While that improved performance significantly, nurses gave even more feedback slips to their assistants when they were also given data on the percentage of time that the assistants actually used gloves when handling soiled linens. And, most of the assistants' glove-wearing behavior increased more during this phase of the study.

Although the researchers assessed satisfaction of both the nurses and their assistants, they did not ask the nurses if they preferred one type of feedback to the other.

Babcock, R. A., Sulzer-Azaroff, B., Sanderson, M., & Scibak, J. (1992). Increasing nurses' use of feedback to promote infection-control practices in a head-injury treatment center. *Journal of Applied Behavior Analysis*, 25(3), 621-627.

Green et al. article

I like this article because it presents a very nice objective assessment of the barriers that can interfere with the implementation of training programs in human service settings. It is an excellent example of a low-cost intervention that substantially increased staff-conducted training with clients. Also, notice the "kindness" toward the staff. Staff were complaining that they could not complete training because of the interference of their care-taking responsibilities. These authors did not protest that, they listened, and then collected data to determine *when* staff had the time to do training.

Also, once again, notice that in Experiment 2, the intervention included a lottery; however, interestingly enough the staff did not rate the lottery system very highly.

33. 460, 1st col, 1. "A structural analysis of staff behavior patterns over time might help identify" what? In other words, why conduct a structural analysis of staff behavior patterns? Notice that the possibility of competing activities is essential to this discussion and answer. And, just to tie things together a bit, the PDC developed by Austin does include a question about this – it is the last question included in his). Austin has listed this under the "Consequences" section.
34. 462, 2nd col., 0. Explain why 10:30-11:00 AM appeared to be an optimal time to schedule training activities in the morning based on the structural analysis.
35. 464, 2nd col., 2. Not for the exam, but, note how labor intensive the management system was: daily verbal and weekly written feedback (to each of the 8 staff members) based on formal and informal observations by an individual employed at the facility, self-recordings when training sessions were conducted and a lottery for some tangible reward if the staff person conducted at least 80% of the sessions.
36. 464, 2nd col.

- A. How often was the lottery held?
 - B. When were staff eligible for the lottery?
 - C. What types of things were used as “prizes.” Note that these prizes either did not cost the organization anything or cost very little.
 - D. How were the prizes selected? (again, notice the emphasis on staff participation.)
37. 465, 2nd col, 1. I am not going to ask you to learn the results but do note them. They are quite amazing.
 38. 456, 1st col, 1. Rank order the following management program components in terms of the staff acceptability: self-recorded feedback, external verbal and written feedback, and the lottery system. Which of the three components was not rated on the “like” end of the scale? This is interesting – it is not the usual finding in business and industry.
 39. 469, 1st col., 1. Not for the exam, but this is an excellent discussion.
 40. Nothing from this study objective will be on the exam.

General issues regarding lotteries. In Unit 2, I had you learn three factors that probably influence the extent to which lotteries are effective: the probability that a person will win (determined primarily by the number of people who participate, but some researchers also give out a different number of lottery tickets depending upon the level of performance), frequency of the lottery, and amount/magnitude of the award.

Lotteries have been used in many studies, both in human services and business and industry. Some lotteries were held weekly, some monthly, and the value of the prizes differed across the studies.

At this point we really don't know how these three variables interact with each other. It would be an interesting line of research to pursue. I only know of two studies that have systematically examined these issues, but neither was conducted with staff. Nonetheless I provide the references below.

Lyons, C. A., & Ghezzi, P. M. (1995). Wagering on a large scale: Relationships between public gambling and game manipulations in two state lotteries. *Journal of Applied Behavior Analysis*, 28, 127-137.

Obviously, the prizes are too big for us to usefully relate to interventions in human service settings, but the article is interesting anyway.

Gravina, N., Wilder, D., White, H., & Fabian, T. (2004/2005). The effect of raffle odds on signing in at a treatment center for adults with mental illness. *Journal of Organizational Behavior Management*, 24(4), 31-24.

These authors examined whether different probabilities of winning a raffle (25%, 50%, and 75%) would increase attendance at a socialization center for approximately 75 adults diagnosed with mental illness. Individuals received “points” that could be traded in for store items such as coffee, soda, small food items, and soap. Attendance (well, actually signing in) increased by 14% over baseline when the raffle was implemented, but no difference between the probabilities was evident.

Green, Reid, Passante, & Canipe article

I like this article and included it because of its emphasis on increasing the satisfaction/work enjoyment for supervisors in a human service setting. They have very difficult jobs and this is one of the few articles that have addressed that issue. The interventions may be something that an OBM person would do anyway and not publish, but the important issue here is whether we would we *think* of doing it.

41. 91, 3 – 92,1. Not for the exam, but note the very nice discussion of quality of work life.
42. 93,1. Not for the exam, but notice how the researchers determined the social validity of their approach. This is one reason I am always so impressed with these researchers. Few of us would have thought to do something like this, just like few of us would have taken the trouble/time to do the normative study that Parsons et al. did in the first article in this unit.
43. 98,2. What was the major reason that made the completion of monthly progress notes aversive for Ms. Tome and Ms. Jones and reviewing time sheets aversive for Ms. Noel? How was this solved?
44. 98,3-99,0. The problem and thus the intervention for the fourth supervisor, Mr. Davis, was quite different. What was the problem and how was it solved? (all you have to say here is implementing a lottery system for staff who met performance criteria.) But again, notice the use of the lottery – but with a twist (next study objective).
45. 99,1. Be able to state the unique feature of this lottery: namely that each staff member who met the performance criteria won *something*.
46. 104,2-105,0.
 - A. Of the 5 staff who reported to Mr. Davis and participated in the survey, how many chose to continue it when given the choice? These data appear to disagree with earlier data from Parsons et al. re staff satisfaction with lotteries, but remember this one did differ from the previous lottery – perhaps the fact that each staff member got a prize made the difference. This would be another interesting feature to investigate.
 - B. What did the 5 staff members report about the lottery system? Don't forget to include the "extremely." This is impressive.

Finally, the END!

Unit 8: Performance and Satisfaction and the Hawthorne Effect

1. Cherrington, D. J., Reitz, H. J., & Scott, W. E., Jr. (1971). The effects of contingent and noncontingent reward on the relationship between satisfaction and task performance. *Journal of Applied Psychology*, 55, 531-536.
2. Parsons, H. M. (1974, March 8). What happened at Hawthorne? *Science*, 183, 922-932.

Cherrington et al. article. I have provided a summary of the results of this study at the end of the study objectives - it may help you understand this article.

1. 531, 1. What are the two major speculations about the causal relationship between performance and satisfaction - they are implied but not directly stated in this paragraph.
2. In lecture I will talk about causal vs. correlational analyses, and present an example involving polio and Coke. Learn this example, and its main point.
3. A. Learn the following three situations that would lead to a zero relationship between performance and satisfaction. A zero relationship means that you cannot predict/know what a person's satisfaction is likely to be if you know what his or performance is and vice versa.
 - B. In lecture and on the ppt slides, I will provide diagrams of each of the below: Learn them for the exam.
 - (1) Random relationship: some high performers are satisfied and some are not; and some low performers are satisfied and some are not
 - (2) Satisfaction is the same for all workers, regardless of their performance.
 - (3) Performance is the same for all workers, regardless of their satisfaction.
4. 531,3 A. According to Skinner, what are feelings are what are they not?
 - B. What are both behaviors and feelings products of? Explain what this means in your own words.
 - C. What does Skinner's point of view imply for the relationship between performance and satisfaction?
 - D. From lecture and the ppt, be able to diagram the way traditional I/O psychologists view the relationship between performance and satisfaction, and the relationship between the two that is suggested by Skinner's analysis of feelings.
5. Abstract and 531,4. According to the authors, what determines the relationship between performance and satisfaction?

Note: The key to understanding this is that rewards cause satisfaction. But the rewards do NOT have to be contingent upon performance in order to cause satisfaction. If you keep this in mind as you read the article, the author's hypotheses should make sense to you.
6. 531,5-532,2. Describe the three types of performance-reward systems and the authors' hypothesis regarding each.
7. In lecture I will diagram a behavioral analysis of performance and satisfaction - learn these diagrams.

8. Lecture: Why is it that employers can probably never achieve a REAL high relationship between performance and satisfaction?
9. 533,4-5
 - A. What were the results of the comparison of the rewarded and nonrewarded group with respect to satisfaction? Don't worry about the results about performance – just learn the results about satisfaction. (see my summary at the end)
 - B. Explain why these results “make sense” (given that the receipt of rewards causes satisfaction) by referring to the sub-groups that comprised the rewarded vs. nonrewarded group. (see the ppt slide)
10. 533,6-534,0 and lecture.
 - A. Explain the subgroups of participants that comprised the (a) appropriately rewarded group and the (b) inappropriately rewarded group.
 - B. What type of performance-reward system is represented by each group (i.e., a positively-contingent, negatively-contingent, or random reward system)?
11. 534,1 and my summary at the end.
 - A. Explain the results of the comparisons of the appropriately rewarded and inappropriately rewarded groups with respect to satisfaction. Again, don't worry about the results about performance for the exam.
 - B. And, once again, be able to explain why these results make sense (given that the receipt of rewards causes satisfaction) by referring to the subgroups that comprised each of the groups. (see the ppt slide)
12. What type of performance-reward system is represented by the total reward group? Explain your answer by identifying the sub-groups that comprise the total reward group.
13. 534,2-535,1 and *my summary*.
 - A. What relationships between performance and satisfaction (generally, as I discussed them in lecture) were found for: (A) the total group; (b) the appropriately rewarded group; (c) the inappropriately rewarded group?
 - B. Explain why the results for each of these groups makes sense given that rewards cause satisfaction by referring to the subgroups that comprise each. (see the ppt slide)

Parsons article

The Hawthorne studies, as indicated in the Aamodt text, are often cited as one of the most important episodes in the development of I/O psychology – and responsible for putting the “O” in I/O psychology. People talk about them and refer to them all the time. Moreover, a common phrase in experimental psychology, regardless of area of specialization, is "well, were the results due to a Hawthorne effect?" This article dispels the myth of the Hawthorne effect, accounting for the changes from a behavioral perspective. This is an incredible article. It is an article that every I/O psychologist, if not every behavior analyst, should know about. Most of us in OBM know about it, but few others actually do.

An article that is easier to read, and perhaps to understand, was published by Parsons in *JOBM* in 1992, pages 27-43. The article was invited by Mawhinney, the editor of *JOBM*, as a contribution to a special issue entitled "Pay for Performance: History, Controversy, and Evidence." I could have included this article instead of the one I did, but I prefer the original, historical account. But,

if you are interested in reading more about this, do read Parsons article in *JOBM*. I do like a phrase from that article. Parsons stated that "the Hawthorne studies became the biggest Rorschach blot in the history of behavioral and social science." And he was so right!

14. Based on the material below, learn what is typically meant by the "Hawthorne Effect."

Experimental methodology texts inevitably refer to the Hawthorne effect: It is typically defined as changes in the behavior of subjects that are *NOT due to the IV that was manipulated* but rather that were due to the fact that the Ps knew they were in an experiment.

15. 922, 2nd colm, 1. How many studies were conducted, and what were the dates of those studies?

16. 922, 2nd colm-3rd colm, 0. Most identify the illumination study as the locus for the "Hawthorne effect" however this emphasis is not justified. Why isn't this justified?

17. 922, 3rd colm, 1. Not for the exam, but the first experiment conducted in the Relay Assembly Test Room was really the actual source of the so-called "Hawthorne effect," not the illumination study.

18. 923, 2nd colm, 2 - 3rd colm, 0. In the Relay Assembly Test Room, describe the incentive system in detail and indicate how that was altered during the experiment.

The key to the change, from a behavioral perspective, is provided in the last sentence of the paragraph – however, that change would not have been important if the incentive system had not been a *group* incentive system so it is critical that you mention this in your article and describe the features of the group incentive system. I will discuss the essential features in lecture as well. But note carefully that the way in which the incentives were calculated *was not changed* - the only thing that differed was that the group incentives were based on the 5 workers rather than the whole department of 100 or more workers. But this is a very important change because after that change an individual's productivity contributed 20% to the total productivity of group upon which the group incentives were contingent as opposed to 1% of the total productivity of the group.

19. 924, 2nd colm, 1. What other very important difference existed between the test room and the regular department?

What I am looking for here is not just "feedback" but a general description of the feedback and measurement system, that includes the key components, from a behavioral perspective (counter for each completed relay which was visible at all times to the operators, readings taken every half hour or so by the supervisor, and daily reports of production, defects and rejected parts).

20. 924, 3rd colm, 1 *Note that no primary source ever gave details about the feedback system* (nor did secondary sources), which no doubt contributed to misinterpretations of the results. I think this is a *very* important point to know about.

Based on the below, be able to state why was the feedback overlooked for such a long time, given that it can have such a powerful effect on performance?

The Hawthorne studies were conducted between 1924 and 1932. In those days, people were not aware of the powerful effects of feedback, particularly when combined with monetary incentives. As typical of studies of the time, the Hawthorne studies were examining the effects of physical variables on performance (# of breaks, scheduling of breaks, lighting, etc.) rather than the effects of consequences or rewards for performance.

Remember that Skinner did not publish *Behavior of Organisms* until 1938 and *Science and Human Behavior* until 1953; thus there was no field of behavior analysis or operant conditioning (although Thorndike's law of effect was known).

21. 926, 2nd colm, 2 - 3. Few people ever refer to this second Relay Assembly Test Room Study, but it contributed greatly to Parson's analysis and argument – so once again, I consider this to be very important to know about.
- A. Second Relay Assembly Test Room Study: Who were the participants, how many were there, and how was their payment method was changed?
 - B. What type of experimental design is represented by the way in which the conditions were implemented?
 - C. What were the results?
 - D. At the end of the 3rd paragraph, Parsons quite correctly notes that the results of the Second Relay Assembly Group experiment substantiate the hypothesis that the formation of the small group was an important factor in the first Relay Assembly Test Room Study. In the first part of the 3rd paragraph, however, Parsons contrasts the results of the Second Relay Assembly Group experiment with the results from the first Relay Assembly Test Room, noting how they differed.
 1. How did they differ?
 2. To what does Parsons (albeit subtly) attribute these differences?
22. 927, 1st colm, 3-2nd colm, 1-2. According to Homans, what factor made workers in the bank wiring room maintain rather than increase their performance and also made them punish members who worked too fast? In your answer don't just state the factor, also state its implications for workers (the second part of the sentence.) Also, what does "lower the piecework rate" mean? It is essential that you understand this in order to understand the point that Homans is making.
- Not for the exam: In spite of the fact that we have known about this since the days of Hawthorne, raising standards or decreasing the per piece incentive amount is still the Number 1 error that managers make when they implement incentive systems! (Raising the standards and cutting the piecework rate, while different, have the exact same effect for the worker – they must work harder for the same amount of money.)
- Also, not for the exam: The factors that Rothlisberger and Dickson's mention are also quite reasonable (except that I can't understand why workers would be upset if management *increased* rather than *decreased* the piecework rate), but there are too many for you to learn.
23. Often people believe that "cohesive" groups will perform better than "noncohesive" groups. The above results dispel that myth as well. Cohesive groups can perform worse. It all depends upon what group contingencies are implemented within the group. (The group norms were very different in the first relay assembly test room - those workers ostracized and punished poor performers.) For a very interesting example of how cohesive groups can go wrong, read 469,3 in Aamodt: an example about the Hollywood Division of the Los Angeles Police Department.

For the exam: Based on the following material (which I will also talk about in lecture) be able to answer the following question about cohesive groups. It is often said that cohesive

groups/teams will perform better than noncohesive groups/teams. In lecture I stated that this is not true. Explain and include an example in your answer

Answer (include the point about the power of the contingencies – that is the reinforcers and punishers provided by members of cohesive groups have more reinforcing and punishing value): The social contingencies within a cohesive group determine what type of performance cohesive groups will have – those contingencies can support good performance, bad performance, and even unethical behavior. When the group is cohesive, the social contingencies will be more powerful and be more likely to affect the performance/behavior of the individuals within the group.

24. Not for the exam. Note that he discusses interpretations in terms of Locke's goal-setting theory and instrumentality theory (same thing as expectancy theory) on page 929, 1st colm. Also note that he states that expectancy (instrumentality) theory has much in common with an incentive approach as it emphasizes contingent relationships.
25. Not for the exam. The rest of the article is intriguing as well, particularly how he handles other interpretations of the data - this is a true scholarly work. Do read 930,3, for the typical way people interpret the results from Hawthorne (the first sentence is what people typically mean when they talk about a "Hawthorne effect" as I indicated earlier). Note how Parsons argues against this claim.

I also like his redefinition of the Hawthorne Effect in the last paragraph. *"I would redefine the Hawthorne effect as the confounding that occurs if experimenters fail to realize how the consequences of subjects' performance affect what subjects do."*

THE END

Summary of the results of Cherrington et al.

- I. Performance and satisfaction measures
 - A. Rewarded subjects vs. nonrewarded subjects
 - 1. No performance differences (not for the exam)
 - 2. **Satisfaction significantly higher for rewarded subjects**
 - 3. Conclusion again: rewards cause satisfaction, not performance as some have claimed
 - B. Appropriately rewarded vs. inappropriately rewarded subjects
 - 1. Performance significantly higher for appropriately rewarded (not for the exam)
 - 2. **No differences in satisfaction**
 - 3. Conclusion again: rewards cause satisfaction; performance contingent rewards do not cause satisfaction. The authors conclude the latter because rewards were contingent in the appropriately rewarded group but not in the inappropriately rewarded group, yet satisfaction was the same for both groups. However, I very much doubt that these results would hold true if participants/workers knew they were being inappropriately rewarded – that is, if the high performers in the inappropriately rewarded group knew they were the high performers yet did not receive rewards, I would expect them to be dissatisfied. Thus, I am not stressing this particular conclusion, and my strong advice is that you don't either!
- II. Relationship between performance and satisfaction
 - A. Total Group: Random performance-reward system
 - 1. No relationship between performance and satisfaction
 - B. Appropriately rewarded group: Positively-contingent reward system
 - 1. Positive relationship between performance and satisfaction
 - C. Inappropriately rewarded group: Negatively-contingent reward system
 - 1. Negative relationship between performance and satisfaction.