Supervising and Mentoring Undergraduates: A Graduate Student Perspective

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Supervising and Mentoring Undergraduates: A Graduate Student Perspective

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Supervising and mentoring both graduate and undergraduate students is a hallmark of most university-based faculty positions, and a body of literature exists aimed at studying and helping academicians effectively navigate this professorial duty (e.g., Johnson & Huwe, 2002; Landrum & Nelsen, 2002; Slattery & Park, 2002). A related body of literature is geared toward helping undergraduate and graduate students seek out and benefit from effective faculty mentoring (Cesa & Fraser, 1989; Cronan-Hillix, Gensheimer, Cronan-Hillix, & Davidson, 1986; Prinstein & Patterson, 2003). However, in many research laboratories, graduate students also find themselves in supervisory and mentoring roles with undergraduate research assistants. In fact, survey data indicate that 75% of psychology graduate students report having at least some interaction with undergraduate students about research (Bettencourt, Bol, & Fraser, 1994). Despite the frequency of this scenario, there are currently no publications or guidebooks specifically geared toward helping graduate students navigate the murky waters of supervision and mentorship.

In order to address this gap in the literature, we, a group of graduate students from a large research lab, pooled our experiences supervising and mentoring undergraduates. Our group consists of five clinical psychology graduate students, including four females and one male ranging from a third-year predoctoral student to a first-year postdoctoral fellow who recently completed internship. We each have between 3 and 7 years of undergraduate supervisory and mentorship experience, and, collectively, we have supervised over 80 undergraduate students. While we acknowledge that the supervisory relationship is triadic in nature, involving direct and indirect interactions between a faculty member, graduate students, and undergraduate research assistants, there is currently a dearth of literature specifically examining the relationship between graduate students and undergraduate research assistants. In focusing on this relationship, we offer anecdotes, suggestions, and tips designed to enhance graduate students' transition into the supervisory role and to maximize mentoring success when working with undergraduates.

Several important aspects unique to the role of graduate student supervisor are discussed, including: (a) developing a supervision and mentorship philosophy, (b) functioning as a midlevel manager between undergraduates and faculty, (c) transitioning to the role of supervisor, (d) building a team of undergraduate research assistants, (e) training and data management, (f) running an effective meeting, (g) reward a job well done, and (h) accountability and the "tough talks." The final section of the paper, "Transitioning From Supervisor to Mentor: Cultivating Skills for Research and Beyond," is aimed at helping the graduate student supervisor navigate the development of mentoring skills. It is important to note that, although similar, the roles, processes, and aims of supervision and mentoring are not identical. According to *Merriam-Webster's Collegiate Dictionary* (10th edition)—and for the purposes of this paper—supervision is defined as "a critical watching and directing (as of activities or a course of action)" (p. 1184), while mentorship/mentoring involves guiding, listening, and coaching (p. 726).

Getting Started

Developing a Supervision and Mentorship Philosophy

Serving as a supervisor and mentor is often as much of an educational experience for the graduate student as the research assistantship is for an undergraduate research assistant. With that in mind, before embarking on the role of supervisor or mentor, it is wise for new graduate student supervisors to consult the aforementioned literature available to faculty to obtain some guidance about practices that are likely to render the supervisory experience successful. Graduate student supervisors may also consider consulting the large body of literature devoted to educating professionals about the benefits of an undergraduate research assistantship (i.e., Grover, 2006; Landrum & Nelsen, 2002). Secondly, it is important for graduate students to be aware of how their own previous and current mentoring experiences will shape the development of their supervisory and mentoring style. Graduate students are encouraged to reflect on their experiences as undergraduate research assistants: What was most helpful? What was not helpful, or downright frustrating? Were structured didactic training sessions, hands-on practice, observational learning, or some combination of these approaches most beneficial? Graduate student supervisors should also consider how they plan to train undergraduates as well as the expectations they will have of undergraduate research assistants. Finally, and perhaps most importantly, it is critical for graduate students to consult with faculty mentors to gain additional perspective on the above issues as they relate to coordinating a new project.

Functioning as a Midlevel Manager Between Undergraduates and Faculty

Whether the graduate student has been charged with managing the day-to-day operations of a professor's research project as part of an assistantship or whether he or she wishes to gain assistance in conducting personal research projects, the graduate student supervisor functions as a midlevel manager between a faculty supervisor and undergraduates. Thus, in tandem with developing their own supervision philosophy, it is imperative that graduate students understand their faculty supervisors' expectations both of themselves and of the undergraduates in the research lab. Graduate students should be certain that they and the faculty mentor reach a consensus on issues such as how often they will meet with one another and with undergraduates, how undergraduate research assistants will be recruited and trained, and, perhaps most importantly, how graduate students will be expected to troubleshoot project-related problems with the undergraduates being supervised. By ironing out issues with the faculty supervisor prior to beginning the assistantship and continuing consultation throughout the experience, graduate students will take a proactive approach to fostering and shaping the devel-

opment of their personal supervision philosophy while simultaneously ensuring that they adhere to their duties as project managers.

Transitioning to the Role of Supervisor

Even with a clear approach to supervision in mind and the support of a faculty mentor, making the transition to a supervisory role can be difficult. In fact, one student in our research lab went from being an undergraduate research assistant to supervising the same undergraduate research assistant team as a first-year graduate student. While this is an unusual case, it illustrates the somewhat difficult psychological transition that must take place when a graduate student supervisor is of a similar age and experience level as the undergraduate supervisees. Thus, as mentioned above, it is critical for a graduate student to begin to embrace this role before beginning to supervise undergraduates through self-education about supervising and consultation with faculty. However, once the graduate student begins to interact with undergraduates, additional steps may make this role-transition easier on both the new graduate student supervisor and the undergraduate research assistants. In order to get everyone off on the right foot, it is critical for senior graduate students and faculty to anticipate these transitions in advance and arrange for the new graduate student supervisor to come to lab meetings and interact with undergraduates a few weeks before the outgoing supervisor leaves. A caveat for the new graduate student supervisor: Simply showing up on the first day of the assistantship and introducing oneself as the person in charge is probably not going to be successful and may be met with skepticism on the part of the research team.

Once the reigns are officially handed over, it is important for the new graduate-level supervisor to spend time interacting with the undergraduates (e.g., graduate students might have the undergraduates lead them through project duties or ask the undergraduates about their career goals and research interests). Graduate students should strive to create a collaborative team environment by seeking input from undergraduates on changes in project protocol and other key decisions. As in any relationship, it is important for graduate students not to demand undergraduates' respect, but rather to earn it by demonstrating genuine interest in their goals and ideas. Finally, bear in mind that expectations vary between supervisors with regard to issues such as the dress code for running participants and the amount of hours an undergraduate is expected to commit to the project each week. Thus, it is critical that changes in these expectations are communicated effectively during a new graduate student supervisor's initial interactions with research assistants.

Laboratory Logistics

Building a Team of Undergraduate Research Assistants

In contrast to the scenario of "adopting" undergraduate research assistants, some graduate student supervisors, particularly those conducting thesis or dissertation studies, will have to recruit an entirely new team of research assistants. So where does one find undergraduate research assistants? Some ideas for potential recruitment forums include meetings of undergraduate organizations like Psi Chi, messages sent out over the undergraduate psychology listserv, or flyers with e-mail contact information posted throughout campus buildings. Whatever the chosen method of recruitment, graduate students at a large institution should bear in mind the possibility of receiving an overwhelming response to recruitment efforts (as many as 30 email inquiries for only one or two positions). To pare down this initial list of prospective research assistants, graduate students may consider replying to each expression of interest with another e-mail containing screener questions. For example, asking potential research assistants for their grade point average and setting the minimum requirement at 3.0 may help to eliminate those students who are unable to juggle coursework effectively and who, therefore, may have difficulty managing research responsibilities. Other screener questions may inquire about why students are interested in gaining research experience and whether the students' hours of availability are conducive to working on the project. Often implementing a few of these questions will save time and effort by screening out those undergraduates who are unlikely to be compatible with the expectations set forth by the graduate student supervisor.

The next step graduate students may wish to include in the recruitment process involves interviewing the remaining applicants. Fifteen- to 20-minute interviews allow the supervisor to gather more in-depth information about each student's knowledge of psychological research processes (i.e., using SPSS, experience with PsycINFO) and career goals. This is also a good time for the graduate student to communicate the purpose of the research study as well as general expectations and responsibilities of the project. Finally, it is important that the supervisor evaluate necessary skills that a successful undergraduate research assistant must possess (e.g., effective communication abilities, multitasking and problem-solving skills). Remember that first impressions are often telling, and showing up late, dressing inappropriately, or being inebriated (yes, this really happened!) for the interview may reflect the student's approach to responsibilities or suggest that he or she is not yet ready for such a large commitment. Once the graduate student supervisor has a few undergraduates who seem to be a good match for the project, it may be helpful for those undergraduates to complete a second interview with the faculty supervisor before final hiring decisions take place.

Training and Data Management

You have worked tirelessly, toiling (perhaps even ruminating) over each minuscule data collection detail and eagerly dreaming of the moment when you can hit the "run" function in SPSS and pour through the results of a project that lasted 15 months and took a team of 10 research assistants to execute. Finally, you open your database to gaze at the perfect data . . . but wait, there are a few missing data points . . . no, wait, there are rows and columns so empty that you could fill them with the tears you suddenly feel coming on. Moreover, someone seems to have gotten confused about what a "1" represents in the database and what a "4" represents . . .

This hypothetical scenario, albeit melodramatic, resounds with many researchers and raises another important consideration for graduate students in a supervisory role: training undergraduates not only to complete their responsibilities but also to value research procedures and the accuracy of the resulting data. While undergraduates will often assist in many tasks during their assistantship, our experience has been that data entry is one task that presents as especially challenging. At the crux of this issue is the difficulty of conveying to research assistants the importance of data entry, which is often experienced as a tedious and menial task. To avoid data entry errors, and other pitfalls, graduate student supervisors should remember that for many undergraduates who are not yet familiar with the research process, it may be difficult to conceive of how one "little" mistake today can translate into a data disaster 8 months

later. These careless mistakes often seem to reflect a lack of understanding of the importance of the task on the part of the research assistant. Another equally important and similarly challenging issue involves conveying to undergraduates the importance of maintaining the confidentiality of the data. Although confidentiality is an issue that weighs heavy on the minds of graduate students and faculty alike, undergraduate research assistants will likely require training as to why confidentiality is important when conducting clinical research. Without instruction in this area, undergraduate research assistants may not hesitate to take participants' self-report measures home and enter information into a database they e-mailed to themselves.

In order to set the stage for compliance with expectations and rules, and to avoid data debacles and breaches of confidentiality, graduate students may find it helpful to provide undergraduates with an actual syllabus during the initial project training meeting (Landrum, 2008a). This syllabus can outline expectations, project responsibilities and commitments, as well as lab policies (e.g., consequences for missed meetings; 20% of all data will be double entered each month for accuracy checks; data should be stored in a locked file cabinet in a locked room; electronic files should be both encrypted and password-protected). Graduate students should also use this meeting as an opportunity to learn more about each student's previous research experience, topical interests, short- and long-term goals, expectations and hopes for the assistantship, and learning preferences. Similar to the practices of many successful undergraduate faculty mentors (Slattery & Park, 2002), this information can then be used to inform training and experiential exercises. Throughout the remainder of the training process, graduate students may consider encompassing four "core" learning methods aimed to enhance understanding for undergraduates, regardless of previous experience and learning style. The first two methods—weekly meetings and homework assignments—provide an overarching structure for the research experience and encourage the students to learn and think about the research process, even when they are away from the lab. At the same time, the latter two methods—experiential exercises and didactic training—are intended to enhance the quality and depth of the undergraduate's learning by, for example, engendering in-the-moment modeling and hands-on practice, in a safe environment in which they will receive immediate, constructive feedback on their performance.

Running an Effective Meeting

GRADUATE STUDENT: How did the research sessions go this week?

RESEARCH ASSISTANT 1: [*checking her watch*] Fine.

RESEARCH ASSISTANT 2: [*yawning after a long night of studying for midterms*] Yep, fine.

GRADUATE STUDENT: Did any problems come up?

RESEARCH ASSISTANTS 1 AND 2: [*enlivened and convincing*] No, everything was good.

GRADUATE STUDENT: [*almost ready to end the meeting*] So . . . hmm . . . were there any glitches with the computerized questionnaires?

RESEARCH ASSISTANT 2: Oh yeah, well, on Monday night the software was down and so none of the participants were able to fill out the Beck Depression Inventory.

Running an effective meeting entails more than simply showing up and checking in. Although ideally undergraduate research assistants would come to team meetings with a list of questions and concerns, it is perhaps more realistic to anticipate interactions similar to the all-too-common one shared above, which highlights the importance of developing a clear, goal-directed communication style. Rather than relying solely on open-ended questions and accepting one-word assurances as a sign that the project is running smoothly, graduate student supervisors should create a deliberate list of questions that focus on the undergraduate's adherence to the research protocol and on potential problems associated with data collection (e.g., What did you do with the consent form after the participant signed it? Did the video equipment work properly?). By asking a series of specific questions each week, the graduate student may cue the team's memory about research sessions, highlight aspects of the study that are most critical, enhance students' compliance with the research protocol, and provide in-the-moment problem-solving about issues that did arise.

Although a central goal of team meetings is to focus on business—to discuss problems and generate solutions—the most effective meetings are likely to also foster broad-based learning and boost team morale. Based on suggestions from our research assistants, a semi-formal didactic component can be incorporated into team meetings. These didactics, which may range from a discussion about graduate school to more formal presentations by the faculty supervisor on current topics in psychology, can break up the monotony of the "business as usual" meeting model and provide undergraduates with a rich opportunity to learn more about timely issues. Additionally, to maintain positive team morale (and to ensure that the undergraduates are not snoozing through meetings), it may also be helpful for graduate students to occasionally incorporate lighthearted icebreakers, as well as formal celebratory activities, such as semester-end potlucks or pizza parties, and award days to recognize undergraduates for their hard work.

Providing Feedback

Reward a Job Well Done!

Every good behaviorist realizes the importance of positive attention and the powerful impact praise can have on levels of productivity and motivation. Yet, this basic principle is often forgotten when supervising and mentoring undergraduate research assistants, despite the fact that these students constitute the backbone of many research projects. It is an easy trap to fall into, as research assistants who are not meeting expectations present a more salient concern. As a result, they are the ones who attract the attention of their faculty and graduate student supervisors, while the others—the dependable ones, the hardworking ones, the "I'm-always-there-when-you-need-me" ones—simply go on doing exactly what was asked of them and then some. Just as it is important for faculty to reward their graduate-level mentees for performance (Cesa & Fraser, 1989), graduate student supervisors should not overlook the efforts of undergraduate research assistants.

Verbal praise can work well as a reward on a day-to-day basis and should be used often to reinforce quality performance. Not only does it boost morale by conveying a general message of appreciation to research assistants for the work they do, it also reminds them that what they are doing is important and how they are doing it matters. If consistently praising 20 research assistants on an individual basis is too unwieldy a task for the graduate student supervisor, team meetings may provide an excellent forum for voicing praise. In cases where a specific research assistant has done something particularly noteworthy (e.g., volunteered to put in extra time, covered a shift for a sick teammate), graduate student supervisors may consider utilizing a more tangible reward such as a certificate of

appreciation presented at the team meeting or a personalized thank-you card in that student's mailbox. Supervisors may also want to keep a copy of these certificates on file as a way of documenting research assistants' performance. Such documentation becomes an excellent resource when it comes time for letters of recommendation. Finally, for those research assistants who consistently surpass expectations, increased responsibility on the research project or advanced research opportunities (e.g., conference presentations, individual projects) represent additional reward options. Such experiences benefit the research assistants by expanding both the breadth and depth of their research backgrounds, which may be particularly helpful for those interested in pursuing graduate studies. Because such experiences require a great deal of added time and effort on the part of the graduate student supervisor and faculty mentor, however, rewards of this nature are likely best reserved for only those research assistants who demonstrate exceptional levels of commitment and dedication.

Accountability and the "Tough Talks"

While incidents deserving of praise or reward may yield a general sense of how undergraduates are doing over time, such impressions—even when bolstered by an occasional certificate of appreciation—may not represent an objective, comprehensive assessment of undergraduates' performance overall. In order to evaluate undergraduates' work more broadly and establish a method for holding these students accountable for their responsibilities, graduate students supervisors are encouraged to implement a standardized performance evaluation protocol that will be completed for each research assistant every 2 to 4 months. This evaluation may include a Likert-type scale of the student's performance in areas deemed by the graduate student and faculty member to be important to completing the assistantship successfully. Examples of categories that may appear on such a performance evaluation include data entry accuracy, quality of interaction with research participants, adherence to study protocol and lab procedures, meeting attendance, and problem-solving ability. Reviewing these performance evaluations with each undergraduate on a one-on-one basis also provides the graduate student supervisor with an opportunity to bestow additional praise as well as to address any areas that need improvement. Similar to certificates of appreciation, keeping these formal

performance evaluations on file will come in handy when the student requests a reference or a letter of recommendation.

In addition to periodic performance evaluations, graduate student supervisors may also find it helpful to have a standardized protocol for dealing with specific instances of problematic behavior. Although graduate students will likely have many successes when working with undergraduates, they must also be prepared for how to handle situations when, even after pledging commitment and going through training, a research assistant seems to be struggling (e.g., missing meetings, forgetting to show up to run participants). The answer: document, consult, and take action. Creating an "Incident Report" slip allows the graduate student to document, in writing, any act that violates project protocol and expectations (all of which should be described in the research assistantship syllabus). Graduate students may consider allowing all undergraduates one "freebie" incident report, *sans* penalty, followed by the assignment of consequences for accumulating incident reports (e.g., a grade deduction, suspension, or termination, contingent on the severity of the offense). Once an incident has occurred, however, it is important for the graduate student to consult with the faculty supervisor regarding the severity of the offense as well as the appropriate course of remedial action. Following thorough documentation on the incident report slip, the graduate student should set up an individual meeting with the research assistant to discuss the problematic behavior(s). Rather than making these meetings punitive, particularly for the "freebie" incident report where no grade deduction is implemented, the graduate student supervisor should strive to help the undergraduates develop insight into their behavior and then collaboratively come up with steps that must be taken to remedy the problem. Before being filed away, the finalized incident report should then be signed by the undergraduate research assistant, the graduate student supervisor, and the faculty member overseeing the project.

Our personal experiences suggest that these meetings are likely to go smoothly, with undergraduates apologizing profusely, promising it will not occur again, and agreeing to take action to ensure proper execution of responsibilities. Unfortunately, there are situations where it becomes apparent that the research assistantship simply will not work out due to repeated violations of project responsibilities. Again, after consultation with the faculty mentor, it is important for the graduate student supervisor

to provide clear justification and documentation (e.g., the previous incident reports kept on file) for why a person is being terminated and to communicate this to the research assistant in private. This process is certainly easier written about than executed, when the sometimes-tearful student is seated right in the lab. However, graduate students are encouraged to remember that their ultimate responsibility is to the project they are charged with coordinating and that part of their professional development involves learning to effectively troubleshoot problems and provide feedback to supervisees.

Transitioning From Supervisor to Mentor: Cultivating Skills for Research and Beyond

Consulting the literature, carefully screening potential research assistants, and tailoring training across all types of learning styles should result in a graduate student having a team of research assistants so qualified that any one of them is destined to be the next ABCT president. Right? Although a carefully crafted research team is likely comprised of bright, motivated, and "coachable" members, graduate students are encouraged to reflect on their own college days in an effort to establish expectations for undergraduates' independent research in a developmentally sensitive manner (Fromuth et al., 2003). Within a developmental framework, it is important for graduate students to recollect the myriad skills required to design an independent research study, author a conference presentation, or successfully apply for graduate school admission or employment. Given that undergraduate research assistants come with a wide range of experiences and attitudes, skills and expectations, creating a flexible research curriculum may help minimize mentoring pitfalls (e.g., having to deal with potentially critical errors in the data collection process) while maximizing mentoring successes (i.e., striking a balance between providing developmentally appropriate guidance and encouraging independent research).

Our mentoring experiences and the mentoring literature suggest that the broad goals of undergraduate research assistantships are twofold: (a) to provide undergraduates with exposure to the applied scientific research process and cultivate independent research skills; and (b) to assist and prepare undergraduates to enter advanced degree programs or the job market (Landrum & Nelsen, 2002). Thus, in designing a re-

search curriculum aimed to help undergraduates transition from the role of research assistant to novice researcher and critical thinker, graduate student mentors may consider trying to encompass the four core learning methods recommended previously for graduate student supervisors: weekly meetings, homework assignments, experiential exercises, and didactics. These methods will provide an overarching structure for the mentoring experience and foster generalizability of the undergraduate's new skills. Below, we highlight valuable topics and tools, spanning across the core learning methods, which graduate student mentors can utilize to develop a dynamic, individually tailored curriculum that will accomplish the goals of the undergraduate research assistantship.

Fostering Independent Research Skills

The responsibility of a graduate student supervisor is to manage a research project, meaning that many initial interactions between a graduate student and undergraduate research assistants will be devoted to training on project-specific tasks, such as how to debrief participants. However, graduate student mentors are in a position similar to faculty mentors in that the training focus shifts toward educating students on broader issues related to scientific research and the field of psychology. Many undergraduates report that increasing their knowledge of scientific research processes related to their field of interest is one of the primary reasons they seek research experience (Landrum & Nelsen, 2002). Our experience suggests that one such process is that a universal concern among many undergraduates is their limited knowledge of scientific and technical writing. Thus, this may be a good example of one of the first areas where graduate students can begin to mentor undergraduate research assistants. Using the four learning methods, there are numerous ways that a graduate student mentor can cultivate and strengthen undergraduates' writing skills. Examples include assigning homework such as reading "gold standard" writing samples (e.g., empirical studies published in leading psychology journals) and instructional pieces on scientific writing (e.g., Landrum, 2008b; Nicol & Pexman, 1999). Once undergraduates have completed these assignments, it may be helpful for the graduate student to design experiential exercises through which undergraduates can practice their newly learned skills. For example, the graduate student may assign undergraduates the task

of writing a short scientific literature review on a topic of their interest. Then, the graduate student can provide continuous feedback over several cycles of revisions. With increased confidence in their research skills and increased curiosity in a topic area, standout research assistants may wish to conduct an independent research project. Mentoring this process involves regular meetings with the student to discuss the process of generating a research idea that is feasible, measurable, and unique (i.e., fills a gap in the literature). Furthermore, graduate students will need to consult with a faculty mentor throughout the mentorship in order to learn how best to guide the undergraduates as they go through the steps required to plan and implement an independent study (e.g., writing an IRB application, collecting valid and reliable data, analyzing and writing up the results).

Assisting With Graduate School and Employment Preparation

Finally, as mentioned previously, undergraduates may also turn to their graduate student mentors for advice on more general professional issues, such as preparing for graduate school, networking within a field, writing a curriculum vita or personal statement, and integrating into the professional world (e.g., What is appropriate professional attire for a job or graduate school interview? What goes on at a psychology conference?). Similar to the tools and tidbits described above, graduate student mentors can provide sample curriculum vitas or résumés and personal statements, give conceptual or editorial feedback on the mentee's application materials, and model professional behavior and attitudes. Graduate students may consider incorporating some didactic sessions into project team meetings in order to formally address topics such as deciding on a career or type of advanced degree, preparing for the Graduate Record Exam, requesting letters of recommendation from faculty, writing personal statements, and preparing for job interviews. Time outside of team meetings may also be invested in reviewing students' personal statements and vitas or engaging in mock interviews. A detailed discussion of the process of mentoring a graduate school or job applicant is beyond the scope of this paper; however, several informative guides are available that may aid the graduate student mentor and the undergraduate applicant (e.g., American Psychological Association, 2007; Keith-Spiegel & Wiederman, 2000). On a final note, while it

is important for graduate mentors to support the undergraduates with whom they work during the graduate school or employment application process, it is also important to remember that it is ultimately the undergraduate students' responsibility to get application materials together in a timely fashion and to seek application to appropriate schools or prospective employers. Many graduate students feel some amount of allegiance to the undergraduates whom they have mentored, leading to feelings that the success or failure of an application is a personal mission. However, ultimately, just as a graduate student put forth the effort to be successful in his or her quest to gain admission to an advanced degree program, undergraduate mentees have to want it for themselves more than their mentors want it for them.

Final Thoughts

Serving as a graduate student supervisor and mentor can be a gratifying experience, one that provides a unique opportunity to foster the interest of undergraduate research assistants in the research process in a very hands-on way. Yet, when first placed in this role, it can prove to be a daunting and, at times, anxiety-provoking position. However, because acting in this capacity carries so many varied challenges that are critical to a graduate students' own professional development, it is our hope that we might be able to ease the burden a bit by sharing what we have learned along the way. Surely, there are additional issues to consider, topics not elaborated upon in this article (e.g., mentoring undergraduate students who hope to obtain a specific job; special considerations when mentoring students who are members of a minority group). However, in this initial foray into the otherwise uncharted territory of guidelines for graduate student mentorship, we wanted to focus on what we feel are the most salient issues, with the hope that others will build upon this foundation and share their insights and expertise within this domain. Although acting as an effective graduate supervisor or mentor may never be an easy task, it is likely to remain a prominent part of many graduate student careers and, therefore, is worthy of continued attention and advice.

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Origins

Antecedents to a Paradigm: Ogden Lindsley and B. F. Skinner's Founding of "Behavior Therapy"

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Behavior therapy is an approach to psychological service delivery that relies heavily upon nonbiological techniques and learning theories (Erwin, 1978). Today, behavior therapy is considered a dominant treatment strategy and has been applied with many clinical disorders in a variety of therapeutic contexts (Masters, Burish, Hollon, & Rimm, 1987; Thorpe & Olson, 1997). Broadly defined, "behavior therapy involves primarily the application of principles derived from research in experimental and social psychology for the alleviation of human suffering and the enhancement of human functioning" (Franks, 2004, p. 109). While many historians have traced the origins of behavior therapy to seminal publications authored by Eysenck (1960) and Wolpe (1958), it may be argued that it was actually the work of B. F. Skinner and Ogden Lindsley that first directly promoted the use of operant techniques to human behavior change (Lindsley,

2001). The purpose of this paper is to highlight the contributions of the Harvard Pigeon Lab to the formation of behavior therapy, and to introduce Ogden Lindsley and B. F. Skinner as the major proponents of this technique.

As psychological folklore contends, behaviorism was spawned the day that J. B. Watson proclaimed that "introspection forms no essential part of its methods, nor is the scientific value of its data dependent upon the readiness with which they lend themselves to interpretation in terms of consciousness" (Watson, 1913, p. 158). Seven years later, Watson and Rayner (1920) would demonstrate that an 11-month-old boy named Albert could have his fear conditioned, in line with Pavlovian theories and offering some validation to the content of his own manifesto, *Psychology as the Behaviorist Views It* (Watson, 1913).

Eight years after Watson published his "Little Albert" experiment (Watson &

Rayner, 1920), a young and ambitious B. F. Skinner unpacked his copy of Watson's *Behaviorism* (1930) at 388 Harvard Street in Cambridge, Massachusetts, as he prepared to embark on his graduate training at Harvard University (Skinner, 1979). Inspired by the works of Watson and Pavlov, Skinner had hopes of not only obtaining an advanced degree in psychology, but also of redefining the science of human behavior altogether (Bjork, 1993). While this may seem an ambitious aspiration for a first-year graduate student, the interaction between Skinner's passion for invention and the experimental laboratories within the Harvard Psychology Department opened the door for such a contribution. Notably, while studying the reflex of rats' digestive systems and eating behaviors early in his research career, Skinner found that the kymograph—a revolving drum with a paper surface whereby an attached stylus moved in response to dependent variables—provided a unique depiction of physiological changes (Lattal, 2004). While Skinner's use of the kymograph for physiological research was commonplace during the early 20th century, his adaptation of the kymograph was groundbreaking. In particular, rather than fixing the stylus to capture changes in strictly physiological events, Skinner attached the stylus to a fulcrum that a rat would move, thereby recording the operant behavior of the animal in real time (see Skinner, 1956). Over time, Skinner would