

Transformational Leadership in Research Universities

Ryann M Gilmore

University of Louisville

In order to preserve research integrity, leaders at postsecondary research institutions must utilize transformational leadership behaviors in order to promote a campus culture that is the most conducive to responsible research conduct. In support of this assertion, the issue of research misconduct and its potential consequences for both researchers and postsecondary research institutions will be examined, along with a discussion of the dynamics in play within an institution's culture, and how this can contribute to research misconduct. In addition, the advantages of utilizing transformational leadership behaviors to establish an institutional culture that is more conducive to responsible research conduct will be examined; and, finally, guidelines regarding how these transformational leadership behaviors can be utilized in order to promote research integrity will be outlined.

### **Research Misconduct and Its Implications**

An integral first step in determining how institutional leaders can preserve research integrity involves knowing what transgressions constitute research misconduct and what effects the consequences of these transgressions can have. The notion of research misconduct is complex in nature, as the actions and/or inactions that constitute misconduct are numerous, and can vary greatly in terms of severity and even definition. However, the following simple, yet inclusive definition was found within the policies of the Office of Science and Technology, and can be considered sufficient for the purposes of this paper:

the falsification, fabrication, or plagiarism in proposing, performing, or reviewing research, or in reporting research results. Fabrication is making up data or results and recording or reporting them. Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research

is not accurately represented in the research record (as cited in Gardner, Lidz, & Hartwig, 2005, p.245).

It is crucial to prevent such research misconduct within postsecondary research institutions because today's research becomes the foundation upon which future research is built. False and/or fabricated research data can have widespread negative consequences that can affect not only the researcher and their research program and/or institution, but can also affect their research subjects and any future research conducted by their peers. Gardner, Lidz, & Hartwig conducted a survey of 322 members of the Cochrane Collaboration – “a coalition of clinical researchers who conduct research reviews according to a common set of methods” (2005, p.246) – regarding their encounters with “fabricated data or misrepresentation of research” (2005, p.244). As a result of their examination, Gardner et al. concluded that research misconduct was similar in nature to “moving vehicle accidents” (2005, p.250) – although “scientific misconduct is rare in the day-to-day experience of researchers” (2005, p.250), when research misconduct does occur, “the outcome is potentially catastrophic for both the investigator and her program of research” (2005, p.250).

At the most severe end of the spectrum, these “potentially catastrophic” outcomes can be extremely dangerous or even have the potential to be life-threatening. For example, Gardner et al. advocated for research integrity in clinical trials because “decisions about the safety and effectiveness of medical therapies must be based on unbiased and credible evidence” (2005, p.245). If the medical procedures that are conducted within these clinical trials are based on false and/or fabricated research data, then a great possibility exists that these procedures could have adverse side effects on participants' health, perhaps even culminating in death.

Although not every instance of research misconduct can have such dangerous or extreme consequences, other outcomes of research misconduct are still just as “catastrophic”. In an article that appeared in the journal *New Directions for Higher Education*, Gordon, a Washington, D.C. area attorney, discussed the “array of criminal, civil, and administrative sanctions” (1996, p.45), in which both universities and researchers alike can be held liable for as the result of research misconduct. These sanctions ranged in severity, from fines (in addition to the repayment of any grant money received) and suspension, to debarment and even imprisonment (Gordon, 1996). Needless to say, preventing research misconduct should be a top priority for institutional leaders at postsecondary research institutions.

### **Dynamics of Leadership & Culture**

Responsibility for ensuring responsible research conduct within the higher education setting lies primarily with institutional leaders. In 1992, the National Academy of Science (NAS) released a report that was the culmination of a major collaborative study between the NAS, the National Academy of Engineering, and the Institute of Medicine (IOM) regarding issues “related to scientific responsibility and the conduct of research” (p. ix). The panel made the following assertions regarding the responsibilities of institutional leaders within the context of research conduct:

Research mentors, laboratory directors, department heads, and senior faculty are responsible for defining, explaining, exemplifying, and requiring adherence to the value systems of their institutions; administrative officials within the research institution also bear responsibility for ensuring that good scientific practices are observed in units of appropriate jurisdiction and that balanced reward systems

appropriately recognize research quality, integrity, teaching and mentorship (Committee on Science, Engineering, and Public Policy, 1992, p. 7-8).

Perhaps one of the most influential ways that institutional leaders can fulfill these responsibilities is by shaping their institution's culture through their behaviors and actions. The ideal institutional culture is one that subscribes to a "higher-order" system of values and principles, and encourages and inspires its researchers to subscribe and utilize this same system within their research activities. Through his review of the literature regarding culture and education, Owens observed that most of the research "strongly underscored the importance of managing schools so that teachers in them feel that they belong to effective work groups, feel good about the work that they do, and feel that they achieve something on the job that is worthwhile" (1987, p.156). As a result of this observation, Owens made the following assertion regarding leadership and institutional culture:

leadership through the development of an organization's culture means building behavioral norms that exemplify the best that a school stands for. It means building an institution in which people believe strongly, with which they identify personally, and to which they gladly render their loyalty. All of this gives meaning to the work they do, gives it significance, and this – as we know – is highly motivating (1987, p.156).

Unfortunately, it seems as if the institutional culture that exists within most postsecondary research institutions today is one that leaves researchers vulnerable to episodes of research misconduct. Specifically speaking, many scholars believe that the institutional and competitive pressures that exist within an institution's culture can play a major role in research misconduct. In her examination of research misconduct and

misbehavior, Anderson concluded that research institutions often exert “more direct pressures on researchers that may increase the likelihood of misbehavior, chief among them being competitive pressures” (2011, p.89). She noted that “the educational system encourages and rewards competitive success and, some maintain, fosters behaviors that stretch the rules to competitive advantage” (2011, p.89).

In addition, the effects of these pressures on faculty behavior can be long-lasting. Mumford et al. conducted a study in which 102 first-year doctoral students at a large research university took a “battery of paper-and-pencil measures” (2007, p.342) that were designed to examine “the relationship of ethical decision making to climate and environment experiences” (2007, p.342). Based on the results of these measures, Mumford et al. determined that “excessive competitive pressure may lead to the acquisition of beliefs likely to engender the potential for unethical decisions throughout an individual’s career” (2007, p.362).

Although the exact role that institutional and competitive pressure plays in research misconduct cannot be precisely measured, Braxton & Bayer warned that “the greater the institutional pressure for academic scientists to receive external grant support, the less favorable are individual academics’ attitudes toward taking action for scientific misconduct” (1994, p.355). This assertion suggests that these pressures may also have an adversarial effect on researchers’ willingness to take an active part in helping prevent research misconduct within their institutions, further perpetuating an institutional culture that is vulnerable to research misconduct.

Many of these institutional and competitive pressures can stem directly from the reciprocal relationship that exists between leadership and institutional culture. In fact, Bass

& Riggio believed that leadership and culture is so intertwined that they asserted that “an organizational culture affects its leadership as much as its leadership affects the culture” (2006, p.100). An examination of the pressures that institutional leaders face today, how these pressures are intertwined with the pressures that face faculty researchers, and how these pressures can shape an institution’s culture will help identify what strategies will be the most effective in promoting an institutional culture that is more conducive to responsible research conduct.

The culture of higher education today is one in which institutional leaders are expected to do more with less; this high-pressure environment is ripe with elevated expectations and financial uncertainties. Not only are these leaders expected to direct their institutions toward fulfilling the goals and objectives that have been set forth in the institutional mission, but they must also reconcile these goals and objectives with societal expectations of higher education that may fall outside the direct scope of the institution’s mission.

In addition, they must also adapt to the constantly changing landscape that characterizes higher education today. Recently, a national panel of “top education, private sector, public policy, and community leaders” (Association of American Colleges and Universities, 2002, p. vi) came together to analyze the elevated expectations facing higher education institutions in the United States today, culminating in a report published by the Association of American Colleges and Universities (AACU) that highlighted some of the external pressures that higher education faces in the 21<sup>st</sup> century (AACU, 2002). These pressures included changing student demographics, more intrusive state regulation of the

curriculum, changing educational policies and practices, and decreased state funding for public colleges and universities, among many others (AACU, 2002).

The task of meeting these elevated expectations while adapting to an ever-changing environment is made even more difficult by the financial uncertainties that exist within higher education. Weisbrod & Asch asserted that today's colleges and universities are "being struck by a perfect storm of falling investments, credit tightening, declining private contributions from individuals and corporations, declining state funding, and increased student financial need leading to decreased tuition revenue" (2010, p.24). As a result, these financial uncertainties have forced some universities to reluctantly take drastic actions, such as reducing programs, increasing class sizes, or even cutting class sections, which may negatively affect their ability to fulfill the goals and objectives that have been set forth in their institutional mission (Jones & Wellman, 2010, p.8).

In order to soften the need for such reductions, many colleges and universities have opted to shift their financial focus more towards those revenue-generating sources over which they have a greater degree of control or influence. These strategies include increasing "private fund-raising, differentiating tuitions to charge more to students in high-cost programs, enrolling more out-of-state students, and getting more federal money" for research (Jones & Wellman, 2010, p.9). While these strategies allow institutional leaders to relieve themselves of some of the pressures that they face, these strategies are also allowing these institutional leaders to essentially transfer these pressures to other groups of constituents, such as faculty members.

When institutional leaders focus on "getting more federal money" for faculty research activities, they are asking these faculty members to shoulder some of the responsibility for



the institution's financial well-being. Massey & Wilger interviewed a number of faculty members at 19 colleges and universities (including 8 research universities) and found that although many of their study participants considered sponsored research funds to be an efficient way to "provide budget flexibility", once these institutions became "accustomed to this soft money, faculty [became] responsible for maintaining the flow".

Arguably, faculty members experience the most institutional and competitive pressures in relation to tenure. Massey & Wilger found that the "quantity and quality of research represents the defining characteristic of productive behavior for many faculty" (as cited in Wolverton, 1998, p.62), as research has started to become more of a dominant requirement for faculty members to achieve tenure status (Wolverton, 1998; Braxton & Bayer, 1994). In addition, faculty members are not only responsible for conducting research and obtaining the external sponsorship for their research, but they are also responsible for fulfilling a variety of other obligations at the same time, such as teaching and service activities.

The complexly intertwined relationships that exist between institutional leaders, faculty researchers, and institutional and competitive pressures makes it easy to see just how postsecondary research institutions can create and perpetuate institutional cultures that are vulnerable to episodes of research misconduct. Therefore, it is imperative that institutional leaders work to establish an institutional culture that is more conducive to responsible research conduct by utilizing transformational leadership behaviors.

### **Transformational Leadership Behaviors**

Naturally, the ideal institutional culture would be one in which there is an absence of both institutional and competitive pressures, leaving faculty members to fulfill their

obligations without the pressures to increase their number of publications or to be held responsible for generating revenue for their institution. However, this is not possible. As Mumford et al. asserted, at its very nature, science *is* competitive; therefore, an institutional research culture in which there is an absence of all institutional and competitive pressures is simply not possible (Mumford et al., 2007). Instead, Mumford et al. suggested that what may be required is the effective management of these pressures (Mumford et al., 2007).

One of the most influential and effective ways that institutional leaders can manage institutional and competitive pressures and better contribute towards a culture that is more conducive for responsible research conduct is by applying behaviors that are evident in transformational leadership theory.

Kezar et al. defined transformational leadership theory as a “power and influence theory in which the leader acts in mutual ways with the followers, appeals to their higher needs, and inspires and motivates followers to move toward a particular purpose” (2006, p.34). Transformational leadership behaviors work well within the institution of higher education as institutional leaders must direct their constituents towards fulfilling “a particular purpose”: the goals and objectives that were set forth in the institution’s mission. In addition, Kezar et al. further explained that transformational leadership behaviors allow “moral ends (such as equity) [to] now take prominence over purely functionalist objectives” (Kezar et al., 2006, p.35). This type of dynamic can be especially important to cultivate within postsecondary research institutions because this means that institutional leaders would place more emphasis on “moral ends” such as ethical research conduct rather than on “functionalist objectives”, such as the total revenue received from externally funded research

grants, which may help to relieve some of the institutional and competitive pressure on faculty members.

In addition, transformational leaders have the ability to “set the tone” of their institution by modeling certain behaviors. Through their studies of leadership, Kouzes & Posner identified “modeling the way (setting an example)” (as cited in Kezar et al., 2006, p.36) as one of the five types of leadership behaviors found within transformational leadership theory. Institutional leaders who subscribe to a “higher-order” system of values and principles, especially those senior faculty researchers who may act as mentors, are integral to a postsecondary research institution. Not only will they incorporate these type of behaviors in their own research conduct, but they will also model these same moral and ethical behaviors to future generations of researchers, as they are responsible for the socialization of graduate students to “the life of academic research” (Anderson et al., 1994, p.331).

However, some scholars believe that transformational leadership is “unrealistic” in nature. In fact, Birnbaum goes so far as to call transformational leadership a “myth” and “an anomaly in higher education” (1992, p.29). As extrapolated from his longitudinal study of presidential leaders called the Institutional Leadership Project (ILP), Birnbaum depicted transformational leaders as individuals who “change organizational goals and values” (1992, p.29). This type of leadership would be an “anomaly” in higher education since these goals and values of these institutions are deeply rooted in their history and culture (Birnbaum, 1992). Birnbaum also believed that “attempts at transformational leadership are more likely to lead to disruption and conflict than to desirable outcomes” (Birnbaum, 1992, p.29).

Additionally, other scholars do not believe that subscription to a “higher-order” system of values and principles such as morals or ethics is necessary to be an effective leader. According to Kezar et al., these researchers support “value-free theories of leadership” (2006, p.73) in which “a leader’s behavior is dictated by the achievement of desired goals, not ethical considerations” (2006, p.73). An example of a “value-free” leadership theory is transactional leadership, in which “leaders exchange rewards or administer punishments for following (or not following) their wishes” (Kezar et al., 2006, p.35). In this type of leadership, leaders would emphasize the end results rather than how the results were obtained; in the case of the research university, emphasis would be placed on increasing the revenue obtained from externally funded research grants rather than responsible research conduct.

Although “value-free” leadership behaviors may be appropriate for some entities, such as private corporations, they are certainly not appropriate leadership behaviors for those leaders within higher education, especially those who deal directly with research and research integrity issues. Rotberg argued that “higher education needs principled leaders with long-range vision, ones who can ignore the pressures to focus only on this year’s bottom line” (1990, p.B2). In addition, Kezar et al. asserted that critics of “value-free” leadership “question whether the ends justify the means and whether the ends themselves (typically meeting an organizational goal, effectiveness, or change) are worthwhile uses of leadership” (2006, p.73). To place emphasis on the ends by utilizing “value-free” leadership behaviors would, in effect, be increasing the institutional pressure on faculty members to obtain externally funded research grants, which may lead to incidents of research misconduct. The

outcomes of research misconduct can be “catastrophic”, far outweighing any potential revenue gains.

Furthermore, effective transformational leadership in higher education is not as unrealistic as Birnbaum contended. Birnbaum himself asserted, through his research with the ILP, that the existence of “purely” transformational leaders (and “purely” transactional leaders) in higher education is rare. Instead, “good presidents” at his ILP institutions “synergized” approaches from both transformational and transactional leadership (Birnbaum, 1992). Therefore, in order to be the most effective, leaders should utilize transformational and transactional leadership approaches as they see fit. For instance, transformational leadership behaviors such as making decisions that are informed by morals and ethics and modeling moral and ethical behavior would be more appropriate leadership behaviors at postsecondary research institutions than “changing organizational goals and values” (Birnbaum, 1992, p.29), which may be more appropriate when financially unstable institutions are looking to make drastic changes.

### **Transformational Leadership Framework**

Institutional leaders at postsecondary research institutions can utilize transformational leadership behaviors in order to promote a campus culture that is the most conducive to responsible research conduct by adhering to the following guidelines. First, be proactive. According to Bass & Riggio, “by anticipating potential crises, by preparing with active management-by-exception in advance for them, and by long-range, proactive, envisioning transformational leadership, leaders are more effective than if they only engage in dealing with immediate problems” (2006, p.76). By being proactive, institutional leaders can ideally “head off” any behaviors that have the potential to become misconduct before they become

“institutionalized or embedded in organizational cultures and structures” (Harris & Bastedo, 2011, p.117), which can lead to the perpetuation of an institutional culture that is vulnerable to research misconduct.

Second, institutional leaders at postsecondary research institutions should address questionable research behaviors or behaviors that have the potential for misconduct by utilizing “ethical instruction”, by establishing appropriate and efficient support systems, and by conducting “ethical audits”.

Harris & Bastedo advocate the use of “ethical instruction” as an efficient way of addressing questionable research behaviors, asserting that “ethical instruction” is integral to “educating individuals about ethical standards, specifically helping individuals to better distinguish between ‘right’ and ‘wrong’ behaviors” (2011, p.125). Postsecondary research institutions can utilize “ethical instruction” by offering training workshops on responsible research conduct to research faculty. In addition to institutional-level workshops, institutional leaders can also collaborate with national or regional professional organizations in order to further clarify research ethics and federal policies and procedures (Anderson et al., 1994; Braxton & Bayer, 1994).

Another important way that institutional leaders can address questionable research behaviors is by establishing support offices to assist faculty researchers with the obtainment and administration of research grants (such as research integrity and/or grant management offices). This strategy relieves faculty researchers of some of the “non-science” pressures that are associated with obtaining external sponsorship for their research, such as searching for available grant opportunities or creating a proposal package. In addition, this strategy allows these institutions to take advantage of the expertise that specialized research

administrative professionals can offer in the way of ensuring compliance and addressing other complex, “non-science” issues.

Finally, institutional leaders can address questionable research behaviors by conducting “ethical audits” (Harris, 2011, p.127). “Ethical audits” are continual evaluations of whether individuals or departments are “meeting the institution’s ethical expectations” (Harris, 2011, p.127). These audits are essential not only in “heading off” any future potential crises, but they can also help inform institutional leaders about the issues that exist regarding research misconduct and what needs the faculty has in resolving these issues. This can help institutional leaders determine what kind of training is needed and what support systems need to be established in order to ensure responsible research conduct.

Exemplifying research ethics and existing federal policies and procedures is only part of the work involved in ensuring research integrity. Additional steps must be taken to ensure that these ethics and policies and procedures are actually followed. However, this is difficult to enforce due to the largely self-regulatory nature of research. Therefore, institutional leaders must model the type of behavior they expect within their institution.

The final step in this set of guidelines for utilizing transformational leadership behaviors is to model moral and ethical behavior. Smith et al. asserted that “responsible research has been defined as research built on commitment to important values, which include honesty, accuracy, efficiency, and objectivity. These values define the meaning of integrity in research” (2005, p.22). In order to encourage and perpetuate these type of behaviors, leaders must model these same behaviors. As Smith et al. contended,

the enforcement of expectations for responsible conduct ultimately relies on individual researchers and the community dynamics they create. For example,

research mentors impart their perspectives and values to their mentees through interactions in their laboratory groups – behavior that may never be consciously examined but that may play a large role in the development of interactions among mentees (2005, p.22).

It is important to note that utilizing transformational leadership behaviors (or any other type of leadership behavior, for that matter) will not prevent the research institution from instances of research misconduct in its entirety. As Steneck asserts, improving research integrity is a “continuing challenge” (2006, p.68). In addition, “individual-level factors” (Anderson, 2011, p.85) exist that must be taken into account, such as personality traits, deficits in moral development, and personal weakness (Anderson, 2011), that are largely outside of the institution’s control. However, postsecondary research institutions can expect that leaders who utilize transformational leadership behaviors to use their “higher-order” system of values and principles as a decision-making guide. In addition, transformational leaders will model these type of behaviors to their constituents and future generations of researchers, contributing to an institutional culture in which research misconduct is not created, tolerated, nor condoned, and instead, research integrity is preserved.



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