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Towards a Taxonomy of Academic Misconduct: The Case of Business School Research

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Towards a Taxonomy of Research Misconduct:
the Case of Business School Research

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Abstract

This paper examines the growing pressures and incentives encouraging research misconduct, along with the consequences, as illustrated by the case of business school research. Drawing on a review of the literature on different theoretical approaches to analysing organizational misconduct, we develop a formal taxonomy distinguishing appropriate conduct from blatantly inappropriate misconduct but with a specific focus on the 'grey' areas between these extremes in the form of questionable and inappropriate behaviour. We identify various sources of research misbehaviour and different categories of those affected. The aim is to provide a clearer understanding of what research behaviour is deemed appropriate or not, which stakeholders it affects, and the pressures and incentives likely to exacerbate such misconduct. We conclude with a discussion of how the taxonomy can help shape future good research practice (thereby setting a better example to students), and offer some propositions for future research.

Keywords: research misconduct; taxonomy; inappropriate conduct; questionable conduct; competitive pressures; business schools

Research Highlights

We review different theoretical approaches to the analysis of organizational misconduct.
We develop a taxonomy of different forms of research misconduct of varying severity.
We identify various sources of research misconduct and different categories of those affected.
We discuss how such a misconduct taxonomy can help shape future good research practice.
We provide some testable propositions for investigation in future research.

1. Introduction

Universities, like most institutions, are subject to growing performance pressures. Competition for tenure, research funding, publication 'slots' in elite journals, employment in leading universities, and reputation within the academic community are major drivers of individual or institutional success (Martin, 2016). However, a preoccupation with publishing in elite journals and counting citations may create perverse incentives (Bouter, 2015), encouraging efforts to 'push' or even transgress the boundaries of appropriate behaviour. Indeed, the number of articles retracted by journals has risen more than ten-fold in just ten years (Noorden, 2011). Such 'system gaming' may enhance individuals' chances in the competition for posts and funding, and the academic standing of the organization. Where some boundary has clearly been transgressed, this is regarded as 'misconduct'. Yet as Butler el al. (2017) note, blatant misconduct such as fabrication, falsification and plagiarism constitutes only part of a much wider problem. Such blatant misconduct can be addressed, for example, through legal mechanisms, whereas the "less flagrant, more subtle cases of potential misconduct", or what Fanelli (2009) and John et al. (2012) call 'questionable research practices', remain poorly understood. Moreover, there remains ambiguity about what types of research practices are questionable: "how scientists perceive the line separating ethical from unethical behavior is likely to exhibit a much more ambiguous character than existing research acknowledges" (Johnson and Ecklund, 2016, p.990), although some form of misrepresentation, inaccuracy or bias is generally involved (Steneck, 2006).

We address this ambiguity by proposing a taxonomy of various forms of research behaviour, ranging from appropriate practice to blatant misconduct, specifically focusing on behaviour between these extremes that is 'inappropriate' or 'questionable'. Our taxonomy differentiates between these categories based on the stakeholders affected by the misconduct as well as the severity, ranging from premeditated dishonesty and intentional rule-bending to less intentional poor behaviour that may arise due to complexity, sloppiness, ignorance or honest error. We provide examples drawn from business school research, where competitive pressures seem particularly acute. Our aim is to provide clearer and more consistent guidelines for researchers, especially junior scholars, as well as for journal editors and others responsible for monitoring and preventing academic misconduct.

To develop our taxonomy[1] of research misconduct, we draw on the organizational misconduct literature, which Greve et al. (2010) categorize as being derived primarily from rational choice, strain, cultural, network, and bounded rationality theories of misconduct. We provide illustrative examples (Siggelkow, 2007) from business school research, a field that,

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[1] Some distinguish between a 'taxonomy' and a 'typology', with the former being derived largely from data, and the latter based on categories derived from theory. The framework proposed here involves elements of both.

like others, has encountered growing problems with research misconduct (Honig and Bedi, 2012). This is not to imply that business school research is more prone to misconduct, an issue on which systematic data is lacking.[2] However, as we shall see, competitive pressures on business schools and their faculty are at least as severe as in many other areas, while the rewards for publishing in elite journals are often more lucrative. Furthermore, business school research has become so theoretically sophisticated and methodologically complex that its direct impact on business practice is often rather limited (Bennis and O'Toole, 2005; Banks et al., 2016). Consequently, the temptation to engage in questionable behaviour may be high, since academics may believe that the rewards outweigh the risks of detection, or that there is no direct impact on business, i.e. the 'no harm, no foul' convention applies, especially for ambiguous areas of misconduct. However, such a narrow perspective ignores the wider influence that business schools have on promulgating ethical decision-making in the business community (Floyd et al., 2013). Following Eisenhardt et al. (2016), we chose business school research because it provides a useful case for understanding 'grey' areas of misconduct by capturing certain key aspects, specifically why it occurs, whom it affects and why it matters to management education.

The paper is structured as follows. Section 2 considers the theoretical foundations of organizational misconduct, setting out different theoretical frameworks for analysing and understanding the forms of misconduct exhibited by academics and their organizations. Section 3 explains why we focus on business school research, while Section 4 introduces the entrepreneurial risk-return perspective on business school research. These more theoretical sections provide the foundations for developing a taxonomy of the various forms of research misconduct and other questionable behaviour (Section 5), the different sources of such misbehaviour (Section 6) and the main stakeholders affected (Section 7). Finally, Section 8 summarizes the main conclusions and implications, including presenting propositions for further research.

2. Theoretical foundations of organizational misconduct

Misconduct does not happen in a vacuum but generally emerges from organizational or institutional pressures and incentives – what has been termed 'organizational misconduct'. According to Vaughan (1999), with the rise of formal organizations have often come mistakes, misconduct and disasters, in other words the 'dark side of organizations'. She argues that organizational misconduct occurs when individuals or groups violate internal or external rules, when attempts to engage in or encourage one type of behaviour unintentionally result in another, and by accident.

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[2] In his meta-review of the literature on research misconduct, the only field difference that Fanelli (2009, p.1) found was that "misconduct was reported more frequently by medical/pharmacological researchers than others".

Greve et al. (2010, p.56) define organizational misconduct as "behavior in or by an organization that a social-control agent judges to transgress a line separating right from wrong; where such a line can separate legal, ethical, and socially responsible behavior from their antitheses". A social-control agent is an actor representing a collective that can impose sanctions on behalf of that collective. Organizations may be judged by multiple agents, such as international, national and local governmental entities, as well as professional associations like the American Medical Association, the American Bar Association, university ethics boards and in our case the Committee of Publishing Ethics (COPE). Greve et al. emphasize that their definition "avoids treating misconduct as a straightforward implication of a set of laws, ethical principles, and/or social norms" (ibid., p.56). Misconduct is thus essentially a social construct defined within the context of a particular group, and hence its interpretation may vary across groups and over time (see also Vaughan, 1999).

According to Ashforth at al. (2008), research on misconduct needs to go beyond static individual traits and behaviour to include the role of processes and systems, as well as how individual, organizational and industrial levels interact to foster misconduct. Shadnam and Lawrence (2011, p.381) suggest that widespread misconduct, what they term 'moral collapse', results from the "breakdown of connections between moral communities, organizations and individuals which may be avoidable if actors work to establish or restore those connections". Note that while there are numerous laws banning specific types of organizational misconduct, many types of behaviour are not illegal or are impractical to control through legal proceedings (Krawiec, 2005; Barnett, 2014), including the ambiguous 'questionable research practices' (Fanelli, 2009; John et al., 2012; Johnson and Ecklund, 2016) discussed here. In what follows, the unit of analysis includes both individual and organizational-level misconduct – and the processes and systems affecting these – with a particular focus on the relatively neglected non-legal 'grey' areas.

In their literature review, Greve et al. (2010) note that organizational misconduct has been explored using numerous theoretical lenses, which they categorize into five areas: rational choice, strain, cultural, network and accidental. Their categorization is primarily drawn from organizational theory and related concepts common to business schools, and hence makes assumptions that may not be shared by other research traditions[3] (for example, those in law, psychology or sociology).[4] Nevertheless, it offers a reasonably comprehensive starting point to develop a taxonomy of research misconduct.

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[3] Shortage of space preclude us from going further into the limitations here – for a recent summary of the limitations of theory and research on organizational misconduct, see Palmer et al. (2016).
[4] For examples of legal, psychological and sociological approaches to aspects of gaming and misconduct, see Adams and Pimple (2005), Umphress et al. (2010), and Espeland and Sauder (2007) respectively.

The rational choice perspective includes agency, contract, and reputation theories that address the social control of individually rational actors. Drawing on Arrow (1963), Greve at al. argue that these theories have focused on inappropriate risk taking, accounts manipulation and blatant fraud, where "rational-action modeling assumes self-interested actors who need to be controlled in order not to choose actions that would be beneficial for them but harmful for transaction partners or third parties" (Greve et al., 2010, p.60). The rational choice perspective aligns closely with cost-benefit analysis as used in legal theories of misconduct. Drawing upon Becker's (1968) economic model of crime and punishment, Hornuf and Haas (2014) note that an individual's propensity to commit a crime is a function of the probability of conviction and the punishment that may follow compared with the utility gained from committing that crime. According to Krawiec (2005), legal-based systems that enforce organizations' duties through compliance structures are likely to fail because courts lack sufficient information about the effectiveness of such structures. She argues that compliance-based liability systems tend to encourage "cosmetic internal compliance structures that reduce legal liability without reducing the incidence of organizational misconduct" (ibid., p.572). In short, legal theories of misconduct may fail to deter organizational misconduct, generating costly but largely ineffective compliance structures.

A more recent application of the rational choice perspective is tournament theory, a game-theoretic view of principal-agent relations[5] used to understand the causes of corporate misconduct, in particular those stemming from highly competitive promotion processes in organizations (Shi et al., 2016). Like agency and game theory, tournament theory is based on information asymmetry between principals and agents, and specifically the extent to which worker output can be monitored and how incentives can be used to align individual behaviour with organizational goals. However, the rational choice perspective, and in particular the influence of economic applications like agency theory, has been criticised for damaging the ethical behaviour of practitioners (Ghoshal, 2005; Kidwell and Kidwell, 2008).

Greve et al.'s (2010) second area of organizational misconduct centres on strain theory, which posits that actors resort to misconduct when they fail to achieve their goals (or those imposed on them) through legitimate means. Originally formulated by Merton (1938) to understand why the impoverished were more likely to engage in illegal activities, strain theory has been used to explore how misalignment between goals and actual achievements may result in misconduct at the individual, organizational and societal level (Greve et al., 2010). A related concept, general strain theory (Agnew, 1992), has been used by Lewellyn et al. (2017) to explore the phenomenon of conference paper 'double dipping'. They suggest

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[5] For a summary of principal-agent models of organizational misconduct and their limitations, see Krawiec (2005).

that stressful circumstances create negative emotions, which may be alleviated by engaging in adaptive behavioural responses, including questionable conduct.

The third approach examined by Greve et al. (2010) involves cultural theories of misconduct, again applied at various levels of analysis including occupations, professions, organizations, industries and societies. Organizational cultures incorporate certain norms, values and beliefs about which attitudes and behaviours are deemed appropriate and good. According to Monteduro et al. (2016), social norms can explain some of the causal factors of misconduct, which in turn are influenced by level of education, social development and national characteristics.

In contrast to the rational choice perspective, Greve et al. (2010) observe that research on cultural causes of corruption often focuses on ethics rather than the procedural rules, threats or coercion. They further note that organizational cultures often implicitly encourage while simultaneously condemning misconduct, for example, motivating members to achieve particular ends without providing guidance on how these should be achieved, or by exhibiting a certain tolerance of rule-breaking and undue risk-taking in the guise of innovativeness. This can give rise to what Umphress et al. (2010) call 'unethical pro-organizational behaviour', where individuals attempt to justify their misconduct on the grounds that it helps their organisation. Such a culture may be exacerbated when there are pressures and rewards for extraordinary performance, and it is particularly influenced by the organization's leadership (Schein, 1983; 1985). According to Sims and Brinkmann (2003), deep cultural flaws driven by leadership and veiled by 'window-dressing ethics' resulted in Enron's collapse: "The culture at Enron eroded little by little, by the trespassing of ethical boundaries, allowing more and more questionable behaviour to slip through the cracks" (ibid., p.252).

A culture of misconduct, however, does not explain variation in misbehaviour across organizational participants. This is the focus of Greve et al.'s (2010) fourth approach, network theories of organizational misconduct, which, as they note, "occupy an intermediate position between individual-level theories and the organizational-level theories" (p.68). This perspective focuses on misconduct among individuals linked by strong social ties but often rather isolated from other parts of the network, and on intentional collective efforts to deceive, such as price-fixing. According to Breit and Forsberg (2016), networks between researchers and stakeholders are increasingly common in contemporary academia, and may result in misconduct when, for example, actors are exposed to divergent expectations and pressures from different sources and organizational cultures. They note that "networks may influence people by providing information of practices (e.g., of how to do things or get away with things)" (ibid., p.8).

Grzesiuk (2016) suggests that research on network approaches to misconduct provides inconsistent results and tends to be based on static analyses rather than a dynamic approach that explores changes to networks over time. Network approaches do, however, address Ashforth at al.'s (2008) call to go beyond individual behaviour to include the role of processes and systems embedded within a system, as well as how individual, organizational and industrial levels interact to result in misconduct, and how all this may be shaped by social-control agents. Thus, network approaches link micro individual and group levels of analyses of misconduct (what Ashforth et al. (2008) call 'bad apples') with more macro organization, industry and national levels (i.e. 'bad barrels').

Greve et al.'s (2010) final theoretical framework for analysing organizational misconduct addresses the link between accidents and misconduct, and is based on a recognition that organizations are complex while managers are limited in what they know (March and Simon, 1958; Simon, 1969). Because of such bounded rationality, accidental misconduct may be inevitable (Vaughan, 1999). As we discuss below, complexity and bounded rationality are undoubtedly causes and sometimes even reasonable excuses to justify research misconduct, given the shift towards increasingly complicated methodological approaches, greater emphasis on collaborations with specialized expertise, and demands for greater outputs. They are therefore important factors in the rational choice perspective as well as in the strain, cultural and network theories of organizational misconduct.

3. Business school research

We focus here on business school research for several reasons. First, management education is fast growing and increasingly international (Honig et al., 2014; Morgeson and Nahrgang, 2008). According to Universities UK International (Stern, 2017), UK business schools are by far the largest recipients of foreign students, more than double the next discipline (Engineering and Technology), offering lucrative growth opportunities to many universities. They also have low operating costs compared to disciplines that require expensive laboratories and equipment. At the same time, there is a high demand for business professors who have published in leading journals. Indeed, according to a recent survey, seven of the top ten highest paid professors in the US are affiliated with business schools[6]. Business schools thus illustrate the highly competitive promotion processes in organizations that Shi et al. (2016) suggest may encourage misconduct.

Second, business schools and their faculty are subject to intense competitive pressures from numerous accreditation schemes (e.g. AASCB, EQUIS, AMBA), as well as several influential ranking schemes such as those published by the *Economist, Financial Times*, *US*

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[6] http://www.thebestschools.org/blog/2013/11/25/10-highest-paid-college-professors-u-s/ (accessed on 13 November 2017).

News & World Report, *Wall Street Journal*, *Forbes* and *Bloomberg Business Week*. Efforts to improve their ranking (and the indicators on which such rankings are based) frequently dominate a business school's strategy in their attempts to attract the best students, staff and funding.

Third, while there is an growing range of publication outlets for business school research, there are also strong career incentives and pressures to publish in a narrow range of leading journals, often determined by impact factors or elite rankings such as the *Financial Times* '*FT50*' list or the UT Dallas list of 24 leading management journals. Many universities link tenure and promotion directly to publications in such elite journals, most of which have a rejection rate of over 90%. Morgeson and Nahrgang (2008) discuss how elite journal lists have become extremely influential metrics for judging research performance, which along with other indicators are then used to rank the institutional quality and standing of business schools[7], frequently with detrimental effects (Mingers and Willmott, 2013). As Langford et al. (2007) stress, research proxies are often oversimplified, failing to capture important paths of knowledge flow; hence, a preoccupation with readily available proxies can result in counterproductive activities, where the proxies become the *de facto* goals of institutions or individuals (see also Zimmerman, 2001; Gioia and Corley, 2002; Lawrence, 2008; Adler and Harzing, 2009). As Kerr (1975, p.779) warned over 40 years ago, a "fascination with an 'objective' criterion" may well result in goal displacement, i.e. rewarding one specific behaviour while hoping for another.

Yet such caution regarding proxies has seemingly been ignored in many business schools. For example, Honig et al. (2014, p.120) state: "Collectively, this heightened level of competition, preoccupation with rankings, and rising research expectations, has resulted in significantly increased pressure worldwide on faculty to publish in 'top-tier' journals". They further note that intense competition among business schools has placed a premium on elite journal publications, which in turn is pressuring scholars to "see their work from an entrepreneurial perspective, driving them to consider the risk/return profile of the work they may wish to undertake" (ibid., p.124).

More comprehensive journal lists are also used by specific countries to assess academic performance. These include the Australian Business Deans Council (ABDC) Journal Quality List, the German Academic Association for Business Research journal list (VHB-JOURQUAL), and the UK-based Association of Business Schools (ABS) Academic Journal

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[7] See the second case study described in Annex A, in which a journal article analysing the relative publication performance of one business school reputedly played a significant part in obtaining a major endowment. The methodology was later questioned, and when it was revealed that the authors failed to declare they had worked at that school and that its director had helped draft the paper, the journal published an 'expression of concern'.

Guide.[8] In some cases, university funding is directly linked to publications in leading journals. For example, the allocation of research funds to universities by the Higher Education Funding Council for England (HEFCE) is heavily determined by a periodic assessment exercise, the Research Excellence Framework (REF), which measures quality-related research outputs such as journal publications.[9] For many UK business schools, meeting REF criteria is incorporated into performance evaluations, where faculty promotions and salary increases are heavily influenced by publications in journals on the ABS list.[10]

Pressures to publish, a preoccupation with elite journals as proxies for research excellence, and the potential for high rewards if successful are all likely to foster a more extreme entrepreneurial risk-return perspective, perhaps even shading into amorality, an issue discussed by Honig et al. (2014) and the subject of the next section. While an entrepreneurial risk-return perspective in itself may not necessarily lead to misconduct, one may hypothesize that, from the rational choice perspective, the stronger the competitive pressures and the greater the payoffs, the greater will be the temptation to engage in questionable behaviour or misconduct (Shi et al., 2016).[11] Consistent with strain theory, some academics desperate for tenure approval or promotion may be tempted to engage in misconduct if they risk failing to achieve their goals through legitimate means. While awareness of new plagiarism detection technologies, high profile retractions (see e.g. Furman et al., 2012), and exposure by social media mechanisms may limit more blatant forms of misconduct, more sophisticated metrics-gaming and the deliberate exploitation of certain 'grey' areas of misconduct may emerge in their place.

4. The entrepreneurial risk-return perspective for business school research

Adopting an entrepreneurial[12] risk-return perspective offers interesting insights particularly relevant to business schools. Given that analysing risks and returns is a basic prerequisite of business, it is little surprise that some business professors might 'practice what they preach' in terms of identifying and pursuing proxy performance measures likely to result in personal and institutional success. Here, we are not criticizing such entrepreneurial efforts by individual academics, nor the systems that encourage such behaviour. Instead, our focus is on

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[8] See http://www.harzing.com/download/jql_journal.pdf (accessed on 13 November 2017) for a comprehensive list of journal ranking schemes.
[9] The REF results influenced the distribution of £1.6 billion of research funds for 2016-17 – see http://www.hefce.ac.uk/media/HEFCE,2014/Content/Pubs/2016/201607/HEFCE2016_07.pdf (accessed on 13 November 2017).
[10] For a critical analysis of the detrimental effects of an overemphasis on ABS-listed journals, see Mingers and Willmott (2013).
[11] See the two case-studies in Annex A, which provide illustrative support for this.
[12] The use here of the term 'entrepreneurial' is not to imply that an entrepreneurial risk-return perspective invariably results in amoral behaviour. We are merely pointing out that, when competitive and other pressures are extreme, those who adopt such an approach may be more inclined to cut corners.

how such an orientation may occasionally result in undesirable outcomes, specifically in two areas. First, a myopic focus on proxies tends to distance unethical behaviour from direct harm, thus incentivizing rule-bending because the risks of direct damage may seem remote. Second, there is the indirect but very important impact on business education, where, consistent with cultural theories of misconduct, unethical research behaviour tends to erode a culture of integrity in the classroom, which in turn may legitimize unethical business behaviour in practice (Floyd et al., 2013). As Tang and Liu (2012) show, a supervisor's personal integrity and character have significant effects on business students' subsequent propensity to engage in or refrain from unethical behaviour.

No harm, no foul: Fraudulent business research might seem to have rather limited impact on the subject under investigation, i.e. business. In marked contrast to the medical field, it is rare for companies to blame their failure or poor performance on following the advice of a fraudulent academic publication. Indeed, much business school research published in elite journals has become so narrow, theoretically sophisticated and methodologically complex that its direct impact on business practice is limited (Bennis and O'Toole, 2005; Banks et al., 2016). Falsifying the results for a new pharmaceutical drug could lead to deaths, whereas falsifying data for a business journal publication is unlikely to directly affect specific businesses, because managers (including those seconded to MBA classes) are unlikely to read – let alone fully comprehend – papers published in elite journals. The risks of fraudulent business school research may therefore be downplayed by some in terms of the mantra 'no harm, no foul'. This problem thus combines issues of complexity with the rational choice perspective, in which the potential damage of misconduct may be perceived as minor by the perpetrator when compared to the potential gains.

Do as I say, not as I do: The larger problem, however, involves the ethical culture that business schools develop and promulgate. Floyd et al.'s (2013, p.753) literature review concluded that the "reputation of business has been besmirched with a continuous parade of financial scandals" with widespread economic repercussions. According to Cavanagh (2009, p.20), the leaders responsible for these scandals "are graduates of our 'best' business programs", which have "failed to convey ethics, social responsibility, and good moral habits to their graduates".[13] In response, Floyd et al. (2013) call for a greater emphasis on ethical priorities within business schools. Cabral-Cardoso (2004, p.87) similarly stresses the importance of ethics as part of an institution's core values, but poses the question: "How can ethics instruction be taken seriously when expediency and self-interest appear to overrule ethical considerations among faculty?"

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[13] For discussion of the role of business schools and their teaching in corporate scandals and the 2007 financial crisis, see Swanson and Frederick (2003), Ghoshal (2005), Pfeffer (2005), and Giacalone and Wargo (2009).

Although the risks of getting caught while engaging in blatant misconduct are growing with new plagiarism detection technologies (Lee, 2011) and with grass-roots initiatives like PubPeer and Retraction Watch, there are, as we discuss below, numerous 'grey areas' involving questionable research practices that remain problematic. Yet there is limited discussion in the literature as to what research behaviour is specifically deemed questionable or inappropriate. In what follows, we attempt to fill this gap by developing a taxonomy of different forms and levels of research misconduct and other questionable behaviour. This includes examining the sources of these different forms of misconduct as seen from the rational choice, strain, cultural and network theories of organizational misconduct, as well as the more specific entrepreneurial risk-return perspective reflected in much business school research. We discuss the paradoxical impact of over-simplistic research proxies and bounded rationality, where expectations of increasingly complicated methodological approaches, greater emphasis on collaborations with specialized expertise, and demands for more outputs in a narrow range of elite journals are all playing a role in shaping research behaviour. To complete the taxonomy, we draw on the 'no harm, no foul' and 'do as I say, not as I do' discussion above to consider the degree of misconduct and to examine who is affected.

5. Towards a taxonomy of research misconduct

Blatant research misconduct is often contrasted with appropriate conduct – i.e. good scientific practice. There is not, however, a simple dichotomy but rather a continuum of behaviour that also includes 'questionable' and 'inappropriate' conduct. Blatant research misconduct is clearly defined, with universally accepted rules covering plagiarism and data falsification and fabrication in particular. The US Federal Policy on Research Misconduct defines plagiarism as "The appropriation of another person's ideas, processes, results, or words without giving appropriate credit". Data fabrication is "Making up data or results and recording or reporting them", while data falsification is defined as "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".[14] Anderson et al. (2013) note that the US government limits legal jurisdiction to blatant misconduct, leaving other questionable practices largely unregulated.

'Inappropriate' research conduct is where certain rules exist, although they may vary across countries, disciplines, institutions and journals (see Resnik et al., 2015 for an analysis of the variations in misconduct definitions and policies). In contrast, 'questionable' research

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[14] See http://grants.nih.gov/grants/research_integrity/research_misconduct.htm (accessed on 13 November 2017). See also Anderson et al. (2013) for a an extensive review of the literature on research misconduct in the US, including definitions, prominent cases, evidence on prevalence, factors encouraging misconduct, and how best to deal with the problems.

conduct[15] is where there is an absence of clear and explicit rules. However, one test here is that of 'the reasonable reader'[16] – i.e. what would s/he see as acceptable or unacceptable? Another test is whether the individual engaged in the questionable behaviour would resist public exposure[17] or attempt to cover up their actions. A third test concerns intent, and whether the perpetrators believed they would receive some benefit from the questionable behaviour. Table 1 below sets out illustrative examples of blatant misconduct, inappropriate, questionable and appropriate conduct.

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[15] One could further separate 'dubious conduct' from 'questionable conduct', with the former being defined as research conduct that most 'reasonable readers' would regard as inadequate or unsuitable, while for 'questionable conduct' opinions are more evenly divided between those who regard the conduct as acceptable and those who do not. However, it is probably better to keep the taxonomy relatively simple at this stage.

[16] The notion of the 'reasonable reader' is well established in the legal sphere, in particular with regard to law on libel. According to 'the innocent-construction rule', US courts must interpret the words "as they appeared to have been used and according to the idea they intended to convey to the reasonable reader" (see https://definitions.uslegal.com/i/innocent-construction-rule/ - accessed on 13 November 2017). See also McCraw (1991).

[17] "Would such behavior pass the *New York Times* front page test (i.e., how would the author feel if the *New York Times* did a front page exposé of such academic practices)?" (Anon, 2015, p.216)

Table 1. A Taxonomy of Research Misconduct, Inappropriate and Questionable Conduct

Nature of behaviour	Appropriate conduct	Questionable conduct	Inappropriate conduct	Blatant misconduct
	Widely accepted as good scientific practice	*Absence of clear rules but test of 'the reasonable reader'; perpetrator embarrassed/ reluctant to be revealed*	*Rules exist although there may be some variation by field, country, institution and/or journal)*	*Clearly defined and universally accepted rules*
Data manipulation	• Winsorization*	• HARKing	• Selective reporting • Omitted data	• Data fabrication (e.g. Stapel, Hunton) • Data falsification (e.g. Lichtenthaler, Smeesters)
Use of work by others	• Drawing from and building on work of others	• Short phrases lifted from others and not put in quotation marks	• Entire sentences reproduced without source or quotation marks • Failure to cite or acknowledge others	• Plagiarism of entire article, whole section(s) etc. (e.g. Gottinger, Antoniou) • Wilfully omitting an entire body of work (e.g. in a proposal)
Use of own work	• Making every effort to diffuse one's work • Avoiding excessive self-citation • Maximizing one's research output	• Hyping own work/excessive self-citation • Partial overlap with other papers by that author • Salami publishing	• Self-plagiarism (e.g. Frey, Lichtenthaler) • Redundant publication	• Using the same theory or data to arrive at different conclusions (just for the sake of publishing another paper)
Authorship	• Including as authors all who have made a substantial contribution	• Obligatory authorship (e.g. expectation that a PhD supervisor should be an author)	• Ghost authorship (e.g. Song) • Gift authorship • Gift colluding	• Failure to declare an interest (e.g. Yang & Tao)

Source: An extensive review of the literature along with the authors' own experiences as journal editors.

Note: The above categories are not exhaustive; there are many other forms of misconduct (e.g. fake referees, citation cartels, journal impact factor (JIF) manipulation by editors) and the examples listed here are merely illustrative of the spectrum. Note also that some of the above examples may not fall neatly into a single 'box' but extend over two or more degrees of severity (e.g. use of a ghost author to improve the written English may not be considered as 'inappropriate' or even 'questionable').

* Winsorization is the assigning of lesser weight to an apparently spurious outlier or modifying its value so it is closer to other sample values (Dixon and Tukey, 1968; Ghosh and Vogt, 2012).

Matters are complicated by the fact that for certain offences (e.g. data falsification and plagiarism) the degree of severity can vary. Data fabrication is an exception – it is essentially binary in that *either* the data have been produced from the empirical study reported *or* they have been fabricated. One prominent example involves Diederik Stapel, the social psychologist[18] who fabricated data in several dozen studies (Tilburg University, 2012); by 2016, over 50 of his papers had been retracted (in some cases for data falsification rather than fabrication). Another is the accountancy professor, James Hunton, who fabricated data in several articles (Bentley University, 2015) and has now had over 30 publications retracted.

Data falsification represents a clear case of 'blatant misconduct'. In the case of Dirk Smeesters, professor of consumer behaviour at Rotterdam School of Management, four papers were found to have "severe problems" with data manipulation (Erasmus University, 2014) and his employment was terminated. Similarly, several papers by Ulrich Lichtenthaler were discovered to have problems relating to the misrepresentation of the degree of statistical significance and/or deliberate 'omitted variable bias'. His Habilitation was revoked[19] and he had to resign from his Chair of Management and Organisation at Mannheim University in 2015.[20] However, data falsification can take less severe forms including selective reporting and omitted data, and as such may be regarded as 'inappropriate'. Although there are rules regarding such practices, they are sometimes 'fuzzy' in that there is no clear boundary (for instance, how many data outliers can be dropped before this becomes 'inappropriate' or blatant?).

Another form of questionable data manipulation is HARKing or Hypothesizing After the Results are Known (Kerr, 1998) – i.e. retrofitting hypotheses to one's data in order to achieve high(er) statistical significance (Martin, 2016). Such a practice may be encouraged by referees trying the help authors improve the statistical significance of their findings (Anon, 2015), but it is generally considered 'unscientific'.[21] On the other hand, many would regard Winsorization of data – the assigning of lesser weight to an apparently spurious outlier – as acceptable (see e.g. Dixon and Tukey, 1968; Ghosh and Vogt, 2012). In short, data manipulation ranges from blatant misconduct through inappropriate and questionable conduct to broadly acceptable forms of 'trimming' or 'tidying up' of one's data. The precise boundary regarding what is deemed unacceptable is at best indistinct and at worst a matter of rather subjective interpretation.

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[18] He had been Director of the Tilburg Institute for Behavioral Economics Research (TIBER) and later Dean of the Tilburg School of Social and Behavioral Sciences.

[19] See http://www.rhein-zeitung.de/region_artikel,-whu-erkennt-einstigem-starprofessor-lehrbefaehigung-ab-_arid,1037700.html (accessed on 15 December 2016).

[20] This case is examined in more detail in Annex A, in particular the role that competitive pressures played.

[21] One exception is when authors are completely open in acknowledging that their hypotheses had been modified in the light of emerging results (Anon, 2015, p.216).

Plagiarism likewise covers a wide range in terms of seriousness. Plagiarism of an entire paper (e.g. by serial plagiarist Hans Werner Gottinger – see Martin, 2007 & 2012) or large sections (e.g. by Tony Antoniou, whose Deanship of Durham Business School was terminated when substantial parts of his PhD thesis and a journal article were found to have been drawn from other sources – see Tahir, 2008) clearly constitutes serious misconduct. Such cases are, however, relatively rare. More common is lifting of entire sentences (e.g. in the literature review section of a paper) with no use of quotation marks and no indication of the source. While one or two cases in a paper might be passed off, most editors will deem repeated instances to constitute 'inappropriate' research conduct. Another example is where material has been taken from a particular source and paraphrased to some extent but the original source is not cited at that point in the text. Both examples probably come under the heading of 'questionable' research conduct – seen as wrong by many[22] but not necessarily by everyone. Note, however, that editors tend to regard such errors as symptomatic of sloppy research and, if detected and widespread, will often lead to desk rejection.

Besides the direct lifting of text, plagiarism also includes taking ideas or other research material from others and failing to acknowledge the source. Often harder to prove, this is perhaps best seen as a form of 'inappropriate' conduct unless it is widespread and clearly deliberate. A less serious form may consist of hyping of one's own work or excessive self-citation, where the perpetrator may view this as causing no harm and thus no foul, or even as a form of protection against self-plagiarism, even though the outcome is an inflated citation score (Seeber et al., 2018). Here, there are often no clear rules so perhaps this is best described as 'questionable' conduct.

While plagiarism is a form of intellectual theft, self-plagiarism is a form of intellectual deception (ibid.), and can be defined as:

> "the practice by an author (or co-authors) of reproducing text, ideas, data, findings or other material from one or more earlier (or contemporaneous) papers by the same author(s) without explicitly citing or otherwise acknowledging those other papers, thereby misleading the reader (and in particular referees and editors) as to the level of originality of that paper" (Martin, 2013, p.1008).

Self-plagiarism includes a range of forms of differing severity. In some cases, essentially the same paper is republished in different journals. For example, Bruno Frey (formerly professor at University of Zurich) and colleagues published four versions of a study of who survived the Titanic disaster, with each paper containing no cross-references to the others. Such behaviour is generally seen as 'inappropriate'. For example, the editor of one of the affected journals publically stated that he found such conduct "ethically dubious" (Autor, 2011,

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[22] See, for example, the excellent online tutorials on plagiarism on the Indiana University website at https://www.indiana.edu/~plag/examples.html (accessed on 13 November 2017).

p.239). An investigation at Frey's university concluded that "repeated failure to publish the same work without consent of the editors and without cross-references ('*Eigenplagate*')" was "improper" (University of Zurich, 2011), and his university contract was not renewed.

For most journals, authors must attest that submitted papers have not been published nor are they under consideration elsewhere. There are thus clear rules, although it is unknown how effectively they are monitored. While authors may answer 'Yes' to this question, there are many cases where there is some overlap between the paper submitted and others already published by the author(s) or currently under consideration by other journals. Here, the issue centres on the degree of overlap. In the mind of the author, the papers may appear distinct, but the 'reasonable reader' referred to above may perceive there to be significant overlap that affects the level of a paper's originality, and hence the decision on whether to publish.

Related to self-plagiarism is redundant or duplicate publication[23]. This can be defined as "a paper where the existence of one or more prior (or contemporaneous) papers by the same author(s) means that the new paper offers insufficient of an original contribution to knowledge to merit publication in its own right" (Martin, 2013, p.1008). In the pre-digital age (where researchers could scan only a limited set of journals), duplicate publication may have been regarded as acceptable if each version of the paper was addressing a different readership. However, with digital search engines enabling a paper on a given topic to be quickly found wherever it is published, such behaviour is generally now deemed inappropriate[24] unless explicit editorial approval has been obtained. If found out, a duplicate or redundant paper may be retracted by the journal involved.

Also closely related is the phenomenon of salami publishing, defined as:

> the deliberate attempt by an author or team of authors to inappropriately inflate the total of publications yielded by a particular research study (or database, survey, experiment, project or whatever) through a process of subdividing the published output into a number of thin 'slices' or 'least publishable units', thereby either generating a greater number of separate publications than is merited by the overall contribution to knowledge offered by that study, or creating a situation where the research community would instead be better served by the results being combined in a single or a smaller number of publications. (Martin, 2013, p.1008)

Salami publishing is becoming more common due to growing competitive pressure on researchers and funding agencies expecting value for money in the form of publications.

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[23] Redundant or duplicate publication may or may not involve self-plagiarism, depending on whether the author cites or otherwise discloses the existence of the other paper.

[24] For example, it might sometimes be deemed acceptable for a second version to be published in a practitioner journal with a very different readership, or a foreign language journal, but explicit permission from the editors involved and cross-referencing would still be required.

Currently there are no clear rules about how many papers one can legitimately obtain from a given study (something that clearly depends on the scale of the project). Less scrupulous authors or those under intense competitive pressures may try to exploit that ambiguity. For example, Lichtenthaler produced over 20 articles from his PhD study (see Annex A).

Gift authorship, a form of network misconduct, is where researchers are included as co-authors despite not having "participated sufficiently in the work to take public responsibility for the content" (Vancouver Group, 1985, p.722). This can include adding senior or prestigious authors to improve the appeal of the paper or out of a sense of obligation or pressure from senior colleagues. Junior authors may be included in papers to help their tenure file or enhance their employment prospects. Some authors may 'gift collude' – where one author puts the name of another on one paper and in return has his/her name included on another. Most journals have rules against such practices so this constitutes 'inappropriate' behaviour. However, it is almost impossible to detect, and often only becomes an issue when the integrity of a paper is challenged and one of the authors claims they were unaware of what went wrong (Smith, 1994).

The converse of gift authorship is ghost authorship, where an actual author is not named (e.g. for commercial or conflict-of-interest reasons), a practice considered 'inappropriate' and proscribed by most journals.[25] An example involves Michael Song, who, according to a subsequent investigation (UMKC, p.14), admitted that he may have written parts of the Yang and Tao (2011) paper described in Annex A, which claimed that Song was the world's top innovation management scholar!

The last category discussed here is failure to declare an interest in a publication. A history of authors failing to declare a material interest with the result that dubious research went unnoticed (at least initially) has resulted in fairly universal rules among journals requiring the declaration of any relevant professional, institutional, commercial or other material interest. Again, there are grey areas – i.e. when is an interest significant enough to declare and when not? This ambiguity has been exploited by some who think that not declaring an interest may increase the likelihood of publication. For example, Yang and Tao's (2011) paper on the best innovation management researchers and departments failed to declare the pertinent fact that the authors had been visiting researchers at what the paper claimed was the top department in the field. Furthermore, it conspicuously failed to mention that the individual named as top researcher in the field (Song) had actually drafted parts of the paper (UMKC, 2015, p.14). If in any doubt, the author should simply declare that interest to the editor and let the latter decide if it should be made public.

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[25] For a legal approach to the problem of ghost authorship, see Stern and Lemmens (2011).

So far we have summarized various forms of questionable or inappropriate conduct and blatant research misconduct. Although there are relatively clear rules for what is regarded as appropriate and for what constitutes blatant misconduct, there is considerable ambiguity in between these two extremes. We have argued that questionable conduct can be distinguished from inappropriate conduct by the degree to which there are rules precluding that specific form of conduct. However, an effective taxonomy ideally requires a sharper set of distinctions. To achieve this, we next analyse the sources of research misconduct to help us understand the pressures and thus the underlying intent and severity of the behaviour. We then discuss the degree to which the behaviour affects various stakeholders, providing a further means to distinguish between questionable and inappropriate conduct.

6. Sources of research misconduct

Section 2 outlined various theoretically derived sources of organizational misconduct. Table 2 presents a taxonomy of the various types and examples of research misconduct, the theoretical foundations on which they are based, the severity of the misbehaviour involved and relevant corrective measures. While we would contend that competitive pressures and incentives are an ultimate cause of growing misconduct[26], this table sets out different types of 'proximate' causes commonly identified during misconduct investigations.

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[26] We do not explore here the impact of technology on research misconduct, as our primary focus is why, rather than how, research misconduct may occur. In the case of plagiarism, the growing availability of academic material online has facilitated and even encouraged 'cutting and pasting', and a tendency among some to then 'forget' to paraphrase or cite the lifted material.

Table 2. A Taxonomy of the Sources of Research Misconduct and Other Questionable Behaviour

Type	Examples of Behaviour	Theoretical Sources of Misconduct (Greve et al., 2010, plus others as shown)	Severity & Sample Corrective Measures
Premeditated dishonesty	- Fully aware of rules but intent on breaking because risk-reward not aligned - Belief that getting caught is unlikely	Rational choice (e.g. Arrow, 1963) Cost-benefit analysis (Becker, 1968; Hornuf and Haas, 2014)	***Very high*** Loss of research funding, employment termination, criminal charges
	- Desperate to get published for fear of losing career	Strain theory (Agnew, 1992; Lewellyn et al., 2017; Merton, 1938)	
	- Others have got away with it, so belief that this is the only way ahead	Cultural theories (Stein, 1983 & 1985; Monteduro et al., 2016; Sims and Brinkmann, 2003)	
Bending or gaming the rules	- Aware of rules but attempt to shift boundary between appropriate and inappropriate conduct, exploiting unclear or inconsistent rules for personal gain - Belief that "anything goes" and "all that is not forbidden is allowed", often with specious *post hoc* justification (e.g. "I was told not to self-cite") but with evidence of premeditation and/or covering of tracks	Rational Choice (Arrow, 1963) Entrepreneurial risk-return perspective (Honig et al., 2014) Cultural theories (Stein, 1983 & 1985; Monteduro et al., 2016; Sims and Brinkmann, 2003)	***High*** Public exposure, retraction of papers, formal warning
Complexity and ambiguity	- Unclear or different rules, editorial policies, conventions, etc. - General awareness of rules but open to interpretation (ambiguity)	Bounded rationality (March and Simon, 1958; Simon, 1969; Vaughan, 1999) Ambiguity (Fanelli, 2009, John et al., 2012; Johnson and Ecklund, 2016).	***Medium, but potentially more serious if signs of premeditation or cover-up*** Improved awareness, COPE guidelines, clearer expectations of responsibilities of co-authors
	- Many co-authors, all of whom assume someone else makes final check - Individual co-authors submit slightly different versions to different journals	Bounded rationality (March and Simon, 1958; Simon, 1969; Vaughan, 1999) Network theories (Ashforth et al., 2008; Breit and Forsberg, 2016)	
Ignorance and sloppiness	- Researchers from different 'cultures' where norms/ conventions different	Cultural theories (Stein, 1983 & 1985; Monteduro et al., 2016; Sims and Brinkmann, 2003; Umphress et al., 2010).	
	- Lack of experience, research capabilities (e.g. PhD students, junior researchers) - May have intended to sort out problem but 'never got round to it'	Bounded rationality (Simon, 1969; March and Simon, 1958; Johnson and Ecklund, 2016)	
Honest mistake	- Often claimed, but less credible for established researchers, and only valid if not systematic or part of a pattern	Accidental misconduct (Vaughan, 1999).	***Low*** Better training and supervision

Premeditated dishonesty, the most serious type of misconduct, is where the perpetrator is aware of the rules and hides the misconduct in the hope of getting away with it. From the perspective of rational choice theory (e.g. Arrow, 1963; Greve et al, 2010) or cost-benefit analysis (Becker, 1968; Hornuf and Haas, 2014), the culprit has implicitly if not explicitly

weighed up the balance between the benefits of the misconduct (e.g. another publication) against the risk of being caught and the sanctions that may follow. According to strain theory (Greve, 2010; Merton, 1938), the behaviour might be attributed to stressful circumstances (Lewellyn et al., 2017) or shear desperation, such as fears over tenure, employability or meeting grant obligations. It may also be justified through cultural theory (Greve, 2010; Stein, 1985), for example, where the culprit believes that social norms (Monteduro et al. 2016) or deep cultural flaws (Sims and Brinkmann, 2003) encourage systemic corruption and the only way to succeed is through misconduct. Often the misconduct is accompanied by evidence of intent, such as covering one's tracks. An example is the Gottinger case of serial plagiarism mentioned earlier, where the beginning and end of a plagiarized paper would be altered in an attempt to hide the fact that the main body of the paper was plagiarized. The range of sanctions involved in such cases include revocation of research funding, being banned from the affected journals, loss of one's job and perhaps even criminal proceedings.

The second type of misconduct consists of bending the rules, i.e. the individual is aware of the rules but is unilaterally trying to shift the boundary between appropriate and inappropriate conduct in their favour, often exploiting unclear or inconsistent rules. Like premeditated dishonesty, there may be elements of rational choice, cost-benefit and strain theories, although the underlying logic is an extreme version of the entrepreneurial risk-return perspective (Honig et al., 2014), whereby culprits often justify their actions by seeing unclear or inconsistent rules as opportunities to exploit for personal gain. When challenged, the individual frequently offers specious reasons for their behaviour (for instance, if challenged about self-plagiarism, they may claim "My supervisor told me not to cite my own work"). Such culprits tend to have a very restricted and self-serving sense of morality, best summed up in the phrase "All that is not forbidden is allowed". As discussed above, such amoral attitudes towards ethical behaviour in business schools have been partly responsible for a culture that may have facilitated many of the financial scandals in recent years (Cabral-Cardoso, 2004; Cavanagh, 2009; Floyd et al., 2013). Corrective measures include rejection or retraction of papers and the issuing of formal warnings, as well as punitive measures such as public exposure and, depending on the severity and persistence of the behaviour, termination of employment.

The next two types of behaviour are less serious, though still unacceptable. The first includes complexity, a situation where many interacting variables result in bounded rationality (Simon, 1969) making mistakes likely (Vaughan, 1999), and ambiguity, where rules may be open to interpretation (Fanelli, 2009, John et al., 2012; Johnson and Ecklund, 2016). Examples include unclear or inconsistent rules, conventions or editorial policies. Another example might be a paper with numerous co-authors where nobody made a final check, or where one co-author submitted one version of a paper to one journal and another to a second

journal without checking with each other.[27] However, if there are any signs of premeditation, this puts the case in a more serious category. Although complexity can be a legitimate cause of mistakes (discussed below), it is often used in an attempt to retrospectively justify questionable behaviour.

Note that complexity is likely to increase over time, given that elite journals expect ever more sophisticated methodologies and theoretical contributions, while funding agencies may call for greater interdisciplinary collaborations among stakeholders with specialized expertise (Hall et al., 2014) along with demands for more outputs. Breit and Forsberg (2016) suggest that such increased pressures for greater network collaboration can contribute towards research misconduct because *inter alia* collaborators may provide information of dubious practices, such as how to get away with things in order to meet performance targets. Among the corrective measures are clearer rules and guidelines, improved awareness, greater use of COPE guidelines[28], and clearer expectations with regard to co-authors' responsibilities.

Ignorance and sloppiness may occur when the perpetrator is broadly aware of the rules but perhaps rather 'hazy' on exact details. For example, the perpetrator may have been aware of a problem (e.g. a failure to paraphrase material taken from other sources) and intended to resolve the problem later but failed to do so. Failure to properly check the rules or simple incompetence may be the cause, especially for early-career researchers and PhD students (i.e. bounded rationality). Researchers from less scientifically developed countries may also lack adequate training or claim cultural differences regarding research norms and conventions. The defence of ignorance is frequently invoked but is not always credible, the problem instead often being more due to sloppiness or to naivety regarding the editorial process. Moreover, as in other areas of life, "Ignorance of the law is no excuse". Note that if the publication reveals signs of premeditation or attempts by the author(s) to cover their tracks, claims of ignorance or sloppiness are invalid, placing the case in a more serious category. The corrective measures for such cases are broadly similar to those for the previous category, but with particular emphasis on better training and increased awareness.

The least serious type of behaviour involves honest errors or genuine mistakes, which, while not true forms of misconduct or inappropriate behaviour, are nevertheless problematic. The key issue is how the issue is addressed once identified. Such cases can only be a one-off – if repeated or part of a pattern, then this is not a credible defence, and there must also be no evidence of premeditation or attempted cover-up, otherwise it belongs in a more serious category. Honest mistakes are often claimed but are a less credible defence for established

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[27] Another example of complexity is 'Climategate', where the researchers, in attempting to deal with a wide array of stakeholders with very different agendas, ended up resorting to somewhat dubious research practices (Garud et al., 2014).
[28] See https://publicationethics.org/ (accessed on 13 November 2017).

researchers. They may, however, be common among scholars under pressure to juggle numerous projects, teaching and administrative tasks, i.e. a complexity issue (Vaughan, 1999).

Consistent with our distinction between inappropriate and questionable research conduct, the severity of the case (and the ensuing sanction) is greater when: (i) there is evidence of attempts by the perpetrator to hide the mistake; (ii) a repeat offender is involved; (iii) the offender is a more experienced researcher in an institution or country where the rules are clear and the action would thus be seen as unacceptable to the reasonable reader; and (iv) the offender would receive some undue benefit from the 'mistake'. The main approach to dealing with honest errors or genuine mistakes consists of better training and supervision of younger researchers and others who have erred.

Having outlined the various forms of research conduct, and the sources from which they are derived, we now turn to the final component of our taxonomy, the degree to which the behaviour affects different stakeholders.

7. Who is affected by research misconduct, and by how much?

Misconduct, inappropriate and questionable conduct can have an impact on a range of stakeholders. Table 3 below sets out a typology of the main stakeholders affected and indicates, for illustrative purposes, the severity of the impact on each. Most directly, misconduct may have consequences for other researchers. Those who build on research subsequently found to be tainted lose credibility. Victims of plagiarism often feel a strong sense of violation, and may subsequently suffer where, for example, citations are effectively 'stolen' from them, reducing their standing within the academic community and hindering promotion opportunities. Other forms of misconduct with serious consequences include failure to declare an interest and ghost authorship, both of which may result in biased or unreliable results being given undue credibility, potentially misleading those who later draw upon that work.[29] Likewise, undue weight may be given to a paper's results in the case of gift authorship involving a high-status researcher.

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[29] In medical research, the consequences of ghost authorship can be far more severe, for example, influencing regulators to approve a drug.

Table 3. Stakeholders affected by research misconduct

Type of behaviour		Other researchers	Employers	Students	Editors/journals	Societal stakeholders
Blatant Misconduct	Data fabrication	**Authors who build on tainted work lose credibility**	**Perpetrator's inflated publication record ➔ others lose out** **Damage to reputation of institution**	**May lead some to feel rewards of cheating greater than risks & costs of getting caught**	**Serious damage to journal's reputation Major effort needed to investigate**	**Erroneous implications for practice**
	Data falsification					
	Plagiarism	**Authors whose work stolen lose status etc.**				Possible effect on meta-reviews
	Failure to declare an interest	**Biased/ unreliable results – misleads others**	**Damage to reputation of institution**	**Legitimizes unethical behaviour**		**Erroneous implications for practice**
Inappropriate conduct	Selective reporting, omitted data	*Unreliable results – misleads others*	*Perpetrator's inflated publication record ➔ others lose out Salary, promotion costs based on dubious productivity Damage to reputation of institution*	*May lead some to feel that can 'bend' the rules or belief that 'all that is not forbidden is allowed'*	**Major effort needed to investigate/police Repeated infringements ➔ damage to journal's reputation**	*Erroneous implications for practice*
	Sentences lifted without attribution	*Those plagiarized lose potential citations + status*				Possible effect on meta-reviews
	Failure to cite or acknowledge others					
	Self-plagiarism	*Takes publication slots away from legitimate research*				
	Redundant publication					
	Gift authorship	*If high status co-author, undue credibility given to results*				*If high status co-author, undue weight given to results*
	Ghost authorship	**Misleads others**	*Reputational damage*			*Erroneous implications*
Questionable conduct	HARKing	Undue weight given to results/author (➔ others lose out)	Perpetrator's inflated publication record ➔ others lose out Damage to reputation of institution	May lead some to feel that can 'bend' the rules or belief that 'all that is not forbidden is allowed'	*Major effort needed to investigate/police Repeated infringements may ➔ damage to reputation of journal*	*May ➔ erroneous implications for practice*
	Short phrases lifted & not put in quotes	*Those plagiarized lose potential citations + status*				Possible effect on meta-reviews – may ➔ erroneous implications for practice
	Hyping own work/ excessive self-citation	Annoyance with author – weakens reputation				
	Partial overlap with other papers by author					
	Salami publishing					

Code: **Effect on others shown in bold – Severe Impact;**
Effect on others shown in italics – Significant Impact;
Effect on others shown in normal typeface – Minor Impact

For self-plagiarism, the direct consequences are felt mainly by the perpetrator, who may lose peer status and perhaps even their job if discovered (for example, Frey's contract was not renewed by Zurich University). Similarly, the effects of redundant publication and salami publishing are directly felt mainly by the perpetrator in the form of diminished reputation, although other researchers may spend unnecessary time ploughing through additional papers that make little or no additional contribution. However, as discussed below, there are important indirect effects, such as perpetrators being hired or promoted over others who do not engage in such behaviour. Furthermore, senior scholars often set the cultural norms within their communities, which may encourage others to cut corners. In the case of HARKing, the consequence is that other researchers may give undue weight to the results or to the author, with others hence losing out in terms of the attention and status accorded. It may also raise expectations for future research, artificially increasing the bar for publication.

A second stakeholder category consists of employers. Perpetrators of misconduct may have been rewarded with promotion or increased salaries for an inflated publication score at the expense of others in the organization. In addition, there will almost certainly be some damage to the organization's reputation depending on the severity of the misconduct. However, in some cases, a business school may benefit (at least in the short run) through enhanced funding or renewed accreditation. Indeed, some individuals may even attempt to justify their misconduct in terms of helping their organisation, i.e. what Umphress et al. (2010) term 'unethical pro-organizational behaviour'.

The third category of those affected by misconduct consists of students. If they become aware that their lecturers are engaging in and being rewarded for misconduct, some may sense that the rewards for cheating are greater than the risks of getting caught, or that they, too, are entitled to 'bend' the rules. As various studies have suggested, this tendency may be particularly pronounced among economics and business school students (e.g. Frank et al., 1996; Klein et al., 2006; McCabe et al., 2006; Giacolone and Thompson, 2006; Giacolone and Wargo, 2009; Brown, 2011; Wang et al., 2011).

A fourth category of stakeholders comprises journal editors. Serious forms of misconduct require considerable resources to investigate the allegations. This includes putting together a case, seeking a response from the defendant(s), considering that response, determining the outcome and, where the misconduct is proven, deciding an appropriate sanction. This generally involves following a formal procedure as set out by COPE. Such cases typically take several person-months of effort, time that could be better spent on other editorial tasks. Moreover, when misconduct has been detected, their journal's reputation can suffer since their editing and review procedures may be blamed for not detecting the problem sooner.

The last category consists of societal stakeholders such as firms, government departments and NGOs that utilize the research. Here, forms of misconduct such as data fabrication and falsification, failure to declare an interest, ghost authorship and HARKing can all result in erroneous practical implications for management or policy. In the case of gift authorship involving a high-status individual, the possible consequence is undue weight being accorded to the results. However, for plagiarism, self-plagiarism, redundant publication and salami publishing, the consequences for external stakeholders are generally less pronounced, except where meta-reviews are involved, in which case the findings of the undetected plagiarist or self-plagiarist may be given undue weight.

This section completes our taxonomy of research misconduct and other forms of dubious behaviour. By distinguishing between the different types of stakeholders affected by misconduct, we can obtain a clearer view as to who is most seriously affected and to what extent. The results provide further grounds for classifying particular forms of behaviour in the different categories of blatant misconduct (where the impact on others is most severe), inappropriate conduct (where the impact on others is generally not as severe but is nevertheless significant) and questionable conduct (where the impact on others is relatively minor or less direct). In the final section, we synthesize the main conclusions emerging from the literature review and from our efforts to develop a useful taxonomy of research misconduct.

8. Discussion and Conclusions

Growing publishing pressures in academia for improved individual and institutional success appear to have created perverse incentives (Bouter, 2015), encouraging gaming of the system and pushing the boundaries of appropriate research behaviour (Martin, 2016). While examples of blatant misconduct are relatively easy to identify, they are only part of a far wider problem of inappropriate research behaviour (Butler el al., 2017), much of which remains poorly understood (Fanelli, 2009; John et al., 2012) and is often open to ambiguous interpretation (Johnson and Ecklund, 2016). To address this ambiguity, we have developed a taxonomy that differentiates various forms of research behaviour, ranging from appropriate practice to blatant misconduct, and specifically focusing on behaviour between these extremes. Our aim is to provide clearer, more consistent guidelines for researchers, especially those beginning their careers, in an attempt to reduce ambiguity and hence reverse the trend towards dubious research behaviour apparent in many fields (Fanelli, 2009; van Noorden, 2011).

Following Anderson et al.'s (2013) call for research on actual research behaviour rather than hypothetical situations, we cite real examples from business school research, where competitive pressures and incentives to engage in misconduct seem particularly acute (Honig

and Bedi, 2012). At the same time, increasingly sophisticated theoretical and methodical approaches may have distanced much business school research from practice (Bennis and O'Toole, 2005; Banks et al., 2016), encouraging a 'no harm, no foul' justification for dubious behaviour. We attempted to refute this excuse by identifying the stakeholders affected by such behaviour, as well as the pernicious influence it may have on promulgating unethical decision-making in the wider business community (Floyd et al., 2013). If faculty are perceived to be engaged in gaming the system or other dubious conduct, such an amoral culture is likely to be reproduced among graduates, affecting their future behaviour and the organizations in which they work.

Several authors have distinguished appropriate research behaviour from blatant misconduct, while recognizing there is a range of behaviours in between. Building on this, we developed a taxonomy that includes the nature and severity of different forms of research misconduct, its sources and the stakeholders it affects. We have shown how one can combine several bodies of theoretical work, including rational choice, strain, cultural, network, and bounded rationality theories of misconduct. By doing so, we have presented one of the first attempts to construct a more formal and theoretically based taxonomy[30] that can help deal with the growing problem of research misconduct. In particular, it may be useful for training PhD students and young researchers, providing clarity regarding the boundary between what is acceptable and what is not, and encourage scholars to think about the propriety and ethics of their behaviour rather than just relying on 'the rules'. It may also be useful for researchers when reflecting on their research and publication strategies, especially when confronted with pressures to increase their output and maximise their 'score' on some particular metric. In addition, the typology may be useful for editors and others responsible for ensuring research integrity and determining where authors have strayed across the boundary between what is acceptable and what is not, whether intentionally or otherwise.

From the taxonomy and the theoretical perspectives on which it is based, we present in Table 4 a number of testable propositions that might be the subject of future empirical work on research misconduct. (Note that these are merely illustrative rather than intending to offer a comprehensive list.)

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[30] The only other taxonomy we have come across is that developed by Helton-Fauth et al. (2013) but this is rather different in nature, providing a taxonomy of 'ethical events' in research, with the four main categories relating to 'data', 'study conduct', 'professional practices' and 'business practices'.

Table 4. Some testable propositions

Theoretical approach	Proposition
Rational choice theory	• The greater the rewards and pressures for high performance in academic organizations, the more prevalent research misconduct tends to be. • When penalties for misconduct are seen as minor or trivial, the more prevalent research misconduct tends to be. • The lower the probability that misconduct cases are followed up and investigated, the more prevalent research misconduct tends to be. • When rules on misconduct are lacking or unclear, the more prevalent research misconduct tends to be. • When the direct impact of misconduct is seen as trivial (i.e. 'no harm, no foul'), the more prevalent research misconduct tends to be.
Strain theory	• The greater the pressures on individual academics in an organization to perform, the more they come to see research misconduct as justified and the more prevalent it tends to be. • The more intense the competitive pressures on academic organizations, the more prevalent research misconduct tends to be.
Cultural theory	• The more senior academics (e.g. leading researchers, journal editors, business school deans) are seen to be engaged in gaming or other dubious practices, the more prevalent research misconduct tends to be. • The less effort invested by academic organizations in the ethical socialization of their staff, the more prevalent research misconduct tends to be. • The laxer the enforcement of ethical policies by academic organizations, the more prevalent research misconduct tends to be. • The laxer the enforcement of ethical policies by journal editors, the more prevalent research misconduct tends to be. • The more a national or disciplinary culture adheres to a belief that 'all that is not forbidden is allowed', the more prevalent research misconduct tends to be.
Network theory	• The more organizations are involved in a research collaboration with different performance expectations, the more prevalent research misconduct tends to be. • The more internally well connected but globally isolated a part of a research network, the more prevalent research misconduct tends to be.
Complexity and bounded rationality	• Research that involves complicated methodologies is more likely to involve misconduct than in the case of simpler methodologies where it is more difficult to mask. • The more a research collaboration requires different specialist expertise, the more difficult it is for members to know whether misconduct is present, and thus the more likely it is to be prevalent.

Note: 'Misconduct' is used in the above table to include the wider spectrum of dubious and inappropriate behaviour as well as more blatant misconduct.

The rational choice propositions are predicated on situations where the pressures and rewards are high, while the misconduct or questionable research behaviour may be rationally (albeit not morally) justified because it is perceived as marginal or not easily detected. To test these propositions, one could compare organizations characterized by high pressure and rewards with those that are more relaxed. In cases where the misconduct is serious, corrective measures could include threats to research funding, termination of employment or even criminal charges. However, more common is where it is implicitly understood that, if dubious

activities seemingly result in limited harm, then no great efforts are necessary to follow up and investigate them. However, such a 'no harm, no foul' attitude misses the wider implications of academic misconduct, where a 'do as I say, not as I do' attitude among faculty fails to convey appropriate ethical standards to students (Cabral-Cardoso, 2004; Cavanagh, 2009; Floyd et al., 2013). The rational choice perspective is hence rather limited when it comes to understanding and avoiding less blatant forms of research misconduct.

Strain theory differs from rational choice perspectives by focusing on career concerns and the perceived risk of losing out to one's peers as justification for dubious behaviour. To test our propositions here would therefore require understanding psychological factors such as how stressful circumstances create negative emotions (Lewellyn et al., 2017), which in turn are used to justify such behaviour. However, there remains the question whether career threats are indeed the true cause of misconduct or merely a *post hoc* justification.

The propositions associated with cultural theories involve social norms that are influenced, for example, by level of education, social development and national characteristics (Monteduro et al., 2016). These propositions might be tested by examining the degree to which organizational cultures are competitive, or whether an organization's norms, values and beliefs might lead some to conclude that certain forms of misconduct were acceptable. As Greve et al. (2010) note, it is the ethical perspective rather than procedural rules, threats or coercion (the focus of rational choice and strain theories) that should be the focus of such studies, particularly if the organizations involved foster a culture that outwardly condemns misconduct but implicitly supports it, provided it is not detected.

Studies investigating the propositions derived from network theories of misconduct could compare how increased network collaboration in academia affects misconduct, especially when there are divergent expectations and pressures from different sources and organizational cultures (Breit and Forsberg, 2016). For example, studies comparing networks that are internally well connected but globally isolated could be conducted, specifically focusing on whether it is primarily individuals who influence the network (i.e. the 'bad apples' assumption) or vice versa ('bad barrels'), as suggested by Ashforth et al. (2008).

Studies relating to the propositions on complexity and bounded rationality could be conducted from various perspectives. One might assess whether increasingly complicated methodologies offer greater opportunities for misconduct. As Bennis and O'Toole (2005) and Banks et al. (2016) note, business school research has become quite theoretically sophisticated and methodologically complex. Hence, reviewers and editors may be unable to easily detect misconduct. Such research may also be too narrow or abstract to directly affect practitioners, with the result that misconduct may be seen as justified because it causes little real harm, and thus 'no foul'. Another approach might be to explore whether relying on

specialist expertise opens up opportunities for misconduct, which in turn may depend on how far partners are trusted (Anderson et al., 2013).

One overarching proposition related to complexity (not listed in the table) is whether misconduct can be attributed to a single factor, or whether it stems from several causes. We would suggest that misconduct is more likely to derive from a number of complex factors rather than a single cause, and then may be 'justified' in terms of other reasons. This points to a potential limitation of our theoretical framework, derived as it is from Greve et al.'s (2010) categorization of theoretical approaches to organizational misconduct. Nevertheless, by improving our understanding of why misconduct may occur, whom it affects and the direct and indirect impacts it may have, we hope to reduce its occurrence.

This brings us to the limitations of our study and options for future research. First, the taxonomy presented here is not intended to provide a comprehensive list of all forms of misconduct and questionable behaviour. Indeed, new forms of misconduct will doubtless emerge as old ones become more easily detected and policed. Further research could explore, for example, how new technologies are utilized to engage in, detect or pre-empt misconduct. However, our classification of the main sources of misconduct and dubious behaviour, ranging from the most serious and unambiguous through to honest error, provides a framework to help understand why different types of misconduct emerge. As we have shown, misconduct in its various forms has adverse consequences for a range of stakeholders. By analysing and classifying the impacts, we have sought to explain why certain behaviours result in unfair advantage, providing a more complete picture of who the misconduct affects and how. However, further research and discussion within the research community is needed to clarify the sometimes ambiguous boundaries between appropriate and inappropriate research conduct, and to improve awareness so there is less scope for the unscrupulous to exploit current ambiguities.

Secondly, our study was confined to business school research. Other fields may experience different problems with misconduct, so our findings may not be generalizable to all academic areas and circumstances. However, business schools provide a useful illustration because they exhibit a number of traits, including intense competitive pressures and significant incentives and rewards for gaming or pushing the boundaries in order to gain advantage. Such traits are likely to be prevalent (if not as extreme) in other fields, particularly those that are relatively fast-moving, and may be particularly pertinent with regard to 'grey' areas of misconduct.

Thirdly, our taxonomy is derived mainly from an organizational studies perspective – a field with an extensive history of exploring misconduct – and specifically from Greve at al.'s (2010) categorization of the sources of misconduct. We recognize that other perspectives

such as those from psychology[31], sociology or law, may also provide useful insights. In particular, a legal perspective could shed light on the jurisdictional dimension to the taxonomy, i.e. who should be responsible for monitoring and policing, and what legal measures could be employed.[32] Indeed, since misconduct is often likely to involve a number of factors, exploring them through only one theoretical lens may not adequately explain the phenomenon. For example, collaboration is often hailed as a fruitful mechanism for generating new knowledge and research capabilities (as seen from the perspective of network theory) among research disciplines, regions/countries and industry/policy makers (cultural theories). However, increased incentives to collaborate (rational choice theory), coupled with more intense pressures to publish (strain theory), are likely to increase the number of co-authors (complexity), some of whom may not be legitimate contributors or who may engage in collusion or gift authorship.

In conclusion, the taxonomy developed here represents an attempt to achieve greater clarity with regard to research misconduct, particularly the more ambiguous forms. It is not intended to be a static framework, but rather to offer a starting point for understanding why research misconduct emerges, who it affects (both directly and indirectly) and to what degree. Indeed, we recognize that professional norms and rules need to respond to emerging new types of misconduct by those determined to cheat or game the system. By providing greater clarity, we seek to counter some of the excuses commonly used to justify misconduct, and to temper the more extreme forms of entrepreneurial risk-return/ rational choice outlook adopted by certain researchers and their organizations. We hope that the taxonomy presented here, and other articles in this special issue, can serve to discourage dubious behaviour and thus help to shape future good research practice.

Acknowledgements

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[31] See, for example, Mumford et al. (2009) for a study of the influence of personality on research misconduct.
[32] We are grateful to an anonymous referee for this suggestion.

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Annex A: The influence of intense competition on misconduct – two case studies

To illustrate the effects of competition on misconduct, we focus here on two cases, one mainly involving an individual, the other more focussed at the institutional level.

Ulrich Lichtenthaler

Ulrich Lichtenthaler carried out his PhD at WHU (the Otto Beisheim School of Management) in Germany. This study was singularly fruitful, yielding 20 or so publications. It was followed by his Habilitation study, which yielded a similar number of publications. Within six years, he had become one of the most prolific authors in technology and innovation management (TIM). He was publishing at a rate of 10 or so journal articles a year, i.e. approximately five times faster than the average for researchers in the field. In the *Handelsblatt* rankings of German-speaking business schools and their faculty, by 2009 Lichtenthaler (then only 30) was already top for the under-40 category and in second position overall for the period since 2005 (Müller, 2009), and doubtless determined to reach the number one position as soon as possible. He was regarded as the rising star of business science in Germany (Storbeck, 2012). In 2011, Mannheim University sought a replacement for a chair previously held by one the Germany's most eminent social scientists. At that time, Mannheim University was vying for top position in the *Handelsblatt* ranking. Lichtenthaler must therefore have seemed a very attractive 'catch' and he was duly appointed to the chair.

However, in the wider TIM community, suspicions had already begun to be aroused. Many of the papers by Ulrich Lichtenthaler (UL) turned out to be very similar. Two researchers began an investigation of 15 articles published in leading management or innovation journals. This revealed two things: (1) UL papers failed to cite other similar or closely related UL papers – i.e. they appeared to be guilty of self-plagiarism; and (2) many papers suffered from a methodological problem of omitted variable bias. Thus, if Paper 1 investigated and demonstrated the relationship between variables A, B and C, while Paper 2 examined the relationship between variables B, C and D, then Paper 2 clearly suffered from omitted variable bias, since Paper 1 had already demonstrated how Variable A interacted with B and C. Whereas omitted variable bias is normally unintentional (in that the author was unaware that there was another variable affecting the relationship between the variables s/he was focussing on, or the omitted variable bias was unavoidable because there was no practical way of operationalizing that missing variable), in the case of UL's papers the omitted variable bias was intentional and could have been overcome. Once the allegations had been fully investigated by certain journals (including *Research Policy*) and the misconduct proven, the first of UL's papers were retracted.[33]

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[33] See e.g. http://www.sciencedirect.com/science/article/pii/S004873330800228X (accessed on 13 November 2017).

About the same time, a third problem was identified with several UL papers, involving either misreported or deliberately exaggerated degrees of significance for the claimed statistical results (confirming a particular hypothesis or model). Subsequent investigations by other journals revealed just how pervasive these various problems were, and by 2015 16 of UL's papers had been formally retracted.[34] In addition, an investigation at WHU, where UL had carried out his PhD and Habilitation studies, revealed that the problems had been present in UL's work from an early stage, and as a result WHU withdrew his Habilitation in 2014.[35] There was also a formal investigation at Mannheim University, at the end of which UL left his post in 2015.[36]

What might have driven Lichtenthaler first of all to publish at such a prolific rate and, in order to achieve and maintain this, to engage in various forms of research misconduct? Initially, it was probably the desire to succeed in the fierce competition to obtain a faculty position in a leading business school. Later, it would probably have been to be appointed to a prestigious chair. And along the way, once it became clear how well he was doing in the *Handelsblatt* rankings, it was almost certainly a desire to do even better and to move up to No 1 in these rankings that became all-consuming. Mannheim University was also caught up in competition over *Handelsblatt* rankings, vying for top position at the time with the University of Zurich.[37] This may account for the reason why problems with UL's work were not picked up when he was being considered for the Mannheim chair in 2011. Thus, institutional as well as individual level competition may well have been factors in this case.

University of Missouri, Kansas City and Michael Song

In 2012, an article in the *Journal of Product Innovation Management* (JPIM) reported an analysis of the field of innovation management (Yang and Tao, 2012). The paper identified the "world's top innovation management scholars and universities" over the period 1991-2010, updating an earlier analysis by Thieme (2007). Like Thieme, Yang and Tao claimed that the world's top innovation management scholar was Michael Song, Director of the Institute for Entrepreneurship and Innovation (IEE) in the Bloch School of Management at the University of Missouri, Kansas City (UMKC). Furthermore, with regard to the institutional rankings, Yang and Tao concluded that the top innovation management

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[34] See http://retractionwatch.com/2014/10/10/after-16-retractions-management-professor-lichtenthaler-resigns-post/ (accessed on 13 November 2017).

[35] See http://www.rhein-zeitung.de/region_artikel,-whu-erkennt-einstigem-starprofessor-lehrbefaehigung-ab-_arid,1037700.html (accessed on 8 December 2016).

[36] See http://www.uni-mannheim.de/1/presse_uni_medien/pressemitteilungen/2014/Oktober/Prof.%20Dr.%20Ulrich%20Lichtenthaler%20verl%C3%A4sst%20die%20Universit%C3%A4t%20Mannheim/ (accessed on 13 November 2017).

[37] At the University of Zurich, the pressure on its professors to publish would presumably have been just as intense in order to strengthen the institution's position in the *Handelsblatt* rankings. This may have been a factor in Bruno Frey's decision to publish the Titanic study in four different journals.

university was the UKMC, ahead of other institutions such as MIT (ranked at No 2) and Harvard (No 5). Just before the article was published, UMKC issued a press release proclaiming that it was ranked ahead of other leading institutions such as Harvard.[38]

For some, however, the findings were surprising if not downright suspicious. The methodology employed in the analysis involved several choices that were rather unusual and highly questionable. That raised the question of whether the specific methodological approach had been deliberately chosen to arrive at a particular conclusion. Moreover, it was later revealed that, because the paper had been published as a 'Perspective' rather than a normal research article, it had not gone through the normal peer review process. More seriously, the article failed to disclose that the two authors had been visiting scholars at UMKC during 2010-11 (UMKC, 2015, p.4). Such an interest should certainly have been declared, especially as the study's methodology was questionable. Even more seriously, during a subsequent official investigation Michael Song admitted that he "may have written parts … of the paper" (ibid., p.14). Again, this rather crucial interest had not been disclosed at the time.

Although a preliminary investigation by JPIM concluded that the paper's methodology was not fundamentally flawed, once the failure of the authors to declare their interest in UMKC became known, along with Song's role in drafting at least part of the paper, the journal issued a formal "expression of concern", stating clearly that the journal did not "endorse or agree with any statements … made by UMKC about its ranking" (Barczak, 2015, p.655).

UMKC and in particular its Bloch School of Management operated for years in an extremely competitive environment, competing for students, faculty and funding as well as reputation. The JPIM article provided a huge boost to this. Also vitally important was the Princeton Review ranking of its entrepreneurship program, which was crucial for recruitment of students and staff. The Princeton review ranking and the JPIM article were reported to have contributed towards obtaining a $32 million donation for a new building, while the Director received a lucrative salary of over $420,000 a year.[39]

In 2015, following concerns uncovered by local newspaper[40], an investigation by PricewaterhouseCoopers (PwC) revealed that Bloch School officials had falsified data (for example, on enrolment figures, student clubs, and student start-ups) in their submissions to the Princeton Review Board (PRB). In particular, a senior university official admitted that he "felt pressured by the former IEI Director [Song] to do things that were improper in relation

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[38] See http://info.umkc.edu/blochnews/2011/12/05/umkc-ranked-no-1-in-the-world/ (accessed on 13 November 2017).

[39] http://www.kansascity.com/news/local/article10136273.html (accessed on 13 November 2017).

[40] It was alleged that a $32M donation from a patron was based on exaggerated rankings derived from the JPIM paper and the Princeton Review assessment scheme (KCS, 2014).

to PRB submissions" (UMKC, p.25). As a result, Princeton Review stripped UMKC of its 2014 top-25 ranking and also those for the three previous years. Song resigned, and the Bloch School faculty voted to revoke all the rankings and awards that Song's institute had received over the decade he had been the director (KCS, 2015)

In this case, a mixture of competitive pressures were seemingly at work, some at the individual level (centring on Song), others at the institutional level and focusing on the relative standing of the UMKC management school. These were linked to the publication of a paper by two former UMKC visiting scholars with a contentious methodology claiming to place Song and UMKC in top position. More seriously, the intense competition resulted in officials at the Bloch School fabricating data to inflate their prospects in the Princeton Review of the school's entrepreneurship program. Indeed, the PwC investigation revealed the Dean of the Bloch School had sent an email noting that "Henry Bloch gets very upset when our rankings go down. We must do everything we can to increase it when we can *by all means necessary*" (UMKC, 2015, p.22, emphasis added), which indicates the sort of pressures experienced by staff in order to keep the school's largest sponsor happy (Jaschik, 2015).

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