

## Editors' JIF-boosting stratagems – which are appropriate and which not?

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**Editorial (published in *Research Policy*, 45 (2016), 1-7)**

## **Editors' JIF-boosting stratagems – which are appropriate and which not?**

### **Abstract**

This extended editorial explores the growing range of stratagems devised by journal editors to boost their Journal Impact Factor (JIF) and the consequences for the credibility of this indicator as well as for the academic community more broadly. Over recent years, JIF has become the most prominent indicator of a journal's standing, bringing intense pressure on journal editors to do what they can to increase it. After explaining the curious way in which JIF is calculated and the technical limitations that beset it, we examine the approaches employed by journal editors to maximise it. Some approaches would seem completely acceptable, others (such as coercive citations and cross-citing journal cartels) are in clear breach of the conventions on academic behaviour, but a number fall somewhere in between. Over time, editors have devised ingenious ways of enhancing their JIF without apparently breaching any rules. In particular, the editorial describes the 'online queue' stratagem and asks whether this constitutes appropriate behaviour or not. The editorial draws three conclusions. First, in the light of ever more devious ruses of editors, the JIF indicator has now lost most of its credibility. Secondly, where the rules are unclear or absent, the only way of determining whether particular editorial behaviour is appropriate or not is to expose it to public scrutiny. Thirdly, editors who engage in dubious behaviour thereby risk forfeiting their authority to police misconduct among authors.

**Keywords:** Journal Impact Factor; editorial manipulation; ethics; misconduct; inappropriate behaviour; online queue

*Oh, what a tangled web we weave  
When first we practise to deceive!*

### **Introduction**

In June 2015, the latest Journal Impact Factors (JIFs) came out – to much rejoicing among journals where the JIF increased. *Research Policy* (RP) was one of these, our JIF rising from 2.8 to 3.1, the highest ever. For other journals where there was a fall, there was mostly silence. Among many of those editors, however, there was undoubtedly much discussion about what to do to increase the JIF next time. Ever more energetic efforts and yet more

elaborate schemes are doubtless being planned. With RP being the beneficiary of a recent rise, now is perhaps an appropriate time to critically re-examine whether the JIF indicator does tell us something reliable about the relative standing of journals. Do the data produced each year by Thomson Reuters provide “a systematic, objective means to critically evaluate the world’s leading journals, with quantifiable, statistical information”, as claimed?<sup>1</sup>

Over the last 20 years, JIFs have assumed increasing importance among authors and publishers as well as in research assessment schemes.<sup>2</sup> In the academic world, there is growing reliance on indicators and assessments aimed both at individuals (and their career progression in terms of obtaining tenure, promotion etc.) and institutions (subject to research assessment systems, competing in university ‘league tables’). All this imposes escalating pressure on academics to ‘perform’ and maximise their ‘score’ on the chosen indicators. With this has inevitably come a greater temptation to ‘cut corners’. In a small number of cases, this has resulted in clear research misconduct (e.g. fabrication, falsification or plagiarism). In many more cases, it has become manifest in less serious misdemeanours – often labelled ‘inappropriate’ or ‘dubious’ conduct (e.g. ‘salami publishing’, duplicate publication, self-plagiarism<sup>3</sup>) – where the rules or academic conventions are much less clear.

Growing concern with the deleterious effects of JIF<sup>4</sup> led to the launch in 2013 of the San Francisco ‘Declaration on Research Assessment’ (DORA), signed by leading scientists, journal editors and research funders. Its main recommendation is as follows: “Do not use journal-based metrics, such as Journal Impact Factors, as a surrogate measure of the quality of individual research articles, to assess an individual scientist’s contributions, or in hiring, promotion, or funding decisions”.<sup>5</sup> As is clear from this, the focus is on the (mis-)use of

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<sup>1</sup> See <http://thomsonreuters.com/en/products-services/scholarly-scientific-research/research-management-and-evaluation/journal-citation-reports.html> (accessed on July 30 2015).

<sup>2</sup> In many research assessments, it is logistically impossible to read all the published contributions so the evaluators resort to ‘short-cuts’ such as using the JIF to classify all the articles appearing in a given journal.

<sup>3</sup> For definitions and a discussion of these various categories, see Martin (2013).

<sup>4</sup> Those who have expressed severe misgivings about JIFs include Moed & Van Leeuwen (1995), Seglen (1997), Bloch & Walter (2001), Smith (2006), Rossner et al. (2007), Reedik & Moed (2008), Lozano et al. (2012), and Vanclay (2012), the last of whom provides an extensive literature review. A defence of JIF is to be found in Pendlebury & Adams (2012).

<sup>5</sup> See <http://www.ascb.org/dora/wp-content/uploads/2015/07/SFDeclarationFINAL.pdf> (accessed on 14 August 2015).

indicators like JIF with regard to the assessment of individual papers and authors. There are perhaps some signs that DORA may be having an effect on this (Hicks et al., 2015, p.431). However, there is little evidence that it has weakened the use of JIFs to assess journals. As a result, pressures on editors of journals to enhance their JIF remain intense.

In what follows, we explore different responses by editors, some appropriate, some clearly not, others more borderline. Readers are invited to form their own judgements as to which JIF-boosting approaches are appropriate and which are not. Before that, however, we need to look closely at how the JIF indicator is calculated if we are to understand the various stratagems pursued by editors in their efforts to boost it.

### **The Journal Impact Factor**

The Journal Impact Factor (JIF) was devised by Eugene Garfield,<sup>6</sup> the founder of the Institute for Scientific Information (ISI, now owned by Thomson Reuters). It is defined as follows:

“[It] is based on 2 elements: the numerator, which is the number of citations in the current year to *any* items published in a journal in the previous 2 years, and the denominator, which is the number of *substantive articles* (source items) published in the same 2 years.” (Garfield, 1999, p.979; emphasis added)

As this definition indicates, the denominator is restricted to articles with a more ‘substantive’ research content.<sup>7</sup> Which published items do or do not fall into this category is determined by Thomson Reuters in a process singularly lacking in transparency (Rossner et al., 2007). This gives rise to much lobbying behind the scenes as journals and publishers seek to persuade Thomson Reuters to exclude certain types of publication from the denominator in order to boost their JIF (PLoS Medicine, 2006, p.707; Rossner et al., 2008, pp.254-55; Metze, 2010, p.939). The asymmetry between the numerator and the denominator is simply an historical legacy from a time when it was technically difficult to separate citations to ‘substantive’ research articles from those to other types of publication. Today, however, this asymmetry could be easily removed if Thomson Reuters so chose, although it would entail additional work, something which they are apparently not inclined to undertake. The continuing

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<sup>6</sup> The pre-history of the JIF is described Archambault & Larivière (2009), along with the original reasons for the asymmetry between the numerator and denominator in the equation and the rather arbitrary choice of the 2-year citation window. A comprehensive review of impact factors can be found in Glänzel & Moed (2002).

<sup>7</sup> These are sometimes termed ‘scholarly citable items’ (e.g. Hubbard & McVeigh, 2011), although this is rather misleading since editorials and other non-substantive published items are certainly ‘citable’.

existence of this anomaly opens up various avenues for opportunistic journal editors to exploit, as we shall see below.

The JIF indicator was originally devised to help librarians and others identify the most important journals. From early on, however, it was recognised as having major shortcomings at least for research evaluation purposes (see e.g. Seglen, 1997), including the following:

- The 2-year citation window is too short for most fields – annual citation rates for articles typically peak after three to five years (see e.g. IMU, 2008, p.7).
- There are wide variations with journal and field in the proportion of published items not included in the JIF denominator, while the process by which Thomson Reuters classifies published items as ‘substantive’ has been characterised as “unscientific and arbitrary” (PLoS Medicine, 2006, p.707).
- There are variations with type of paper, so review journals often emerge at the top of JIF rankings (Rogers, 2002, p.541).
- The articles contributing to JIF exhibit a highly skewed distribution<sup>8</sup>, so it is statistically invalid to use an arithmetic mean in calculating JIF (Metze, 2010, p.937; Vanclay, 2012, p.227).<sup>9</sup>
- Thomson Reuters insist on quoting JIF to 3 decimal places (i.e. 4 significant figures for many journals), even though the number of papers and citations involved means that most JIF values are not reliable to more than two significant figures (Hicks et al., 2015).<sup>10</sup>
- Independent efforts to replicate individual JIF values have failed, Thomson Reuters apparently using data that no-one else is allowed to see (Rossner et al., 2007 & 2008).<sup>11</sup>

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<sup>8</sup> Royle quotes an example of how a single paper raised the JIF of one journal from 2.051 in 2008 to 49.926 in 2009 (see <https://quantixed.wordpress.com/2015/05/05/wrong-number-a-closer-look-at-impact-factors/> downloaded on 10 September 2015). As he notes: “Did every other paper in this journal suddenly get amazingly awesome and highly-cited for this period? Of course not.” After two years, the JIF for this journal reverted to its earlier level of around 2.

<sup>9</sup> The median would be a somewhat more appropriate measure (it would, for instance, avoid the problem described in the previous footnote), but perhaps even better would be to give percentiles – e.g. the percentage of a journal’s papers among the top 10% (say) of its category. The use of percentiles is discussed in ‘The Leiden Manifesto for research metrics’ (see Hicks et al., 2015, point 6) and in Pulverer (2015).

<sup>10</sup> For many journals, the JIF may fluctuate by 20-40% per annum, showing the large amount of random ‘noise’ in the data.

<sup>11</sup> As Rossner et al. (2007, p.1092) wryly observe, “If an author is unable to produce original data to verify a

As a result, numerous efforts have been made to devise other indicators of the standing of journals, one of the most recent being a Hirsh index (or h-index) for journals.<sup>12</sup> However, none have attained anything like the same prominence as JIF.

### **The norms of academic behaviour – misconduct VS inappropriate or dubious behaviour**

Before examining strategies employed to boost JIF, we first need to consider conventions regarding what constitutes ethical behaviour. In the academic world, certain forms of behaviour such as plagiarism are explicitly ruled out as ‘misconduct’.<sup>13</sup> Here, the rules are clear and widely acknowledged. However, for other forms of conduct, the rules are less clear and different people may see the ‘line’ in different places. For example, some researchers see trying to squeeze large numbers of articles out of a particular study as a desirable goal or as necessary to satisfy research funders, while others may view this as ‘salami publishing’. Certain authors regard publishing the findings of a study in different journals as part of attracting as wide a range of readers as possible, while others condemn this as ‘duplicate’ or ‘redundant’ publication. Quite a few authors feel free to recycle text from their earlier papers, while editors may take the line that this constitutes self-plagiarism if the author fails to make it clear to the reader that the same text has been used elsewhere (Martin, 2013). And while some researchers feel at liberty to subsequently revise or change their hypotheses to arrive at statistically more significant findings, others see this as HARKing (Hypothesizing After the Results are Known – see Kerr, 1998) or *post hoc* retrofitting of hypotheses to the data (O’Boyle et al., 2014; Martin, 2015b), as a result of which many claimed findings may be invalid (Ioannidis, 2005).

In examining the efforts of editors to boost their JIF, we may find a similar distinction helpful. Some efforts are completely legitimate, while others, once exposed, are widely deemed to be unethical. For certain editorial practices, however, the conventions are less clear and opinions may differ as to whether they are appropriate or not. In determining whether particular behaviour is appropriate, the reader might like to bear in mind the

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figure in one of our papers, we revoke the acceptance of the paper”. See also Hernán (2008, p.368).

<sup>12</sup> For a brief discussion of the application of the h-index to journals, see Martin (2015a).

<sup>13</sup> Research misconduct is conventionally defined as “fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results” (see [http://grants.nih.gov/grants/research\\_integrity/research\\_misconduct.htm](http://grants.nih.gov/grants/research_integrity/research_misconduct.htm) – accessed on 29 July 2015).

following question: “Would I, as editor, feel embarrassed if my activities came to light and would I therefore object if I was publicly named?” If the answer is ‘Yes’ or even ‘Perhaps’, then the editorial behaviour in question is probably inappropriate (Martin, 2015b).<sup>14</sup>

### **Stratagems to boost JIF**

Editors’ efforts to boost their JIF involve increasing the numerator in the JIF equation (i.e. the total number of citations) and/or reducing the denominator. As early as 1997, the first reports emerged of editors manipulating their JIF in a dubious or unethical manner (Smith, 1997). A wide range of approaches have been identified (e.g. Reedik and Moed, 2008), with Falagas and Alexiou (2008) drawing up a list of “the top-ten in journal impact factor manipulation”. Here, we focus on some of the most common.

#### *Reducing the JIF denominator*

For particular fields such as medicine and for certain general scientific journals (e.g. *Nature*, *Science*), a large proportion of published items are not substantive research articles and hence not counted in the JIF denominator. These include editorials, book reviews, comments, correspondence, viewpoints and so on. For example, in a recent issue of *The Lancet* research articles and review articles constituted less than 20% of the total items published. True, the non-substantive items tend to earn fewer citations but they nevertheless contribute appreciably to the overall citation total and hence increase the JIF numerator. Indeed, Moed and Van Leeuwen (1995) have shown that their contribution goes a long way to explaining the high JIFs of certain medical journals and general scientific journals. Hence, the substantial efforts by various journals and publishers to persuade ISI/Thomson Reuters to reclassify certain types of published items as ‘non-substantive’ (PLoS Medicine, 2006, p.707; Smith, 2006, p.1130; Rossner et al., 2008, pp.254-55; Metze, 2010, p.939).

In the social sciences, journals generally do not have a particularly high proportion of non-substantive research items. Nevertheless, some do have quite a few editorials, research commentaries, ‘issues and opinions’, discussions and other non-substantive items, thereby

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<sup>14</sup> This stance is embedded in the tradition of ‘public reason’ (e.g. Rawls, 1997), which “requires that the moral or political rules that regulate our common life be, in some sense, justifiable or acceptable to all those persons over whom the rules purport to have authority” (*Stanford Encyclopedia of Philosophy* – accessed at <http://plato.stanford.edu/entries/public-reason/> on 31 July 2015).

adding to the citation total but not the denominator. The reader is invited to judge whether this constitutes appropriate behaviour and, if so, how far this can be legitimately be taken before it becomes ‘inappropriate’. (At *Research Policy* there has been no editorial strategy to increase the proportion of non-substantive published items.)

### *Increasing the JIF numerator*

The most obvious way to increase the citation total is to encourage the submission of better quality papers. This is something all journals do and no-one would surely question this.<sup>15</sup> Another is to seek to publish more review articles, on the assumption that these will generate more citations. (There has been no deliberate policy to do this at RP; instead, we have left it ‘to the market’, waiting for authors to submit review articles rather than soliciting them.)

Rather more dubious are efforts by editors to encourage or even coerce authors to include more citations to their journal. Some approaches to this are ‘softer’ – letting it be known that editors expect more than x citations to the journal if it is to be given serious consideration. This message may be conveyed explicitly (e.g. in correspondence with authors) or diffused through other, less formal means (e.g. ‘advice’ after a preliminary look at a possible submission). The view taken at *Research Policy* is that even this is not appropriate behaviour. Research of the type appearing in RP is also published in a range of other journals, and it would be unrealistic to assume, let alone require, a certain number of citations to previous RP articles. However, what is expected is that authors will have made an effort to orient their paper to the interests of RP readers, including embedding the study in the sort of literature that RP readers are familiar with (much of which may not have been published in RP).

Much more troubling, however, is the approach adopted by some editors of waiting until authors are at their most vulnerable – i.e. just before final acceptance of a paper – and then asking for the addition of a number of citations to the journal *from the previous two years* (the give-away to the JIF game being played). If there is a clear intellectual justification as to why specific references are pertinent to that particular paper, then that is one matter. But if there is no such specific justification, merely a general request to add some recent references

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<sup>15</sup> For advice on optimising citations to one’s journal using means that most people would regard as acceptable, see Cookson & Cross (2006 & 2007).



to the journal, then that comes under the heading of ‘coercive citation’.

In a study of several thousand social scientists, Wilhite and Fong (2012a) explored the extent of coercive citation. They adopted a very specific definition<sup>16</sup> to exclude cases where there *was* a specific intellectual justification for a particular reference being added. Their results showed that the practice of coercive citation is distressingly widespread, especially in management and business studies. Moreover, it is not confined to lower-ranking journals; many top journals, publishers and professional associations are involved, as is apparent from the journals listed in Wilhite and Fong (2012b, Table S12). Most of the respondents in Wilhite and Fong’s survey condemned such coercion. It represents an abuse of power by editors (i.e. senior academics) over authors, many more junior.<sup>17</sup> It is now expressly prohibited under Article I of the Editor Ethics Code drawn up and signed by around 250 editors of management and organisational studies journals.<sup>18</sup>

Consequently, any author faced with such a request to add unspecified citations to the journal should firmly resist. If the editor persists, make it clear that your next step will be to take up the matter with members of the journal’s advisory board, or with the publisher, or with COPE, the internationally respected Committee for Publication Ethics. (*Research Policy* editors decided many years ago not to engage in coercive citation practices and were gratified to note that none of Wilhite and Fong’s respondents named RP, although many other management journals were listed, including several leading ones.)

Another well known device to increase the JIF numerator is to use editorials as an opportunity to cite large numbers of recent articles from the journal. This might take the apparently innocuous form of a guide to young researchers on what sorts of papers the journal publishes, or an effort to summarise the main developments in the field over the last couple of years.<sup>19</sup> In some cases, an editor may take this to the extreme, citing every article

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<sup>16</sup> “Coercive self-citation refers to requests that (i) give no indication that the manuscript was lacking in attribution; (ii) make no suggestion as to specific articles, authors, or a body of work requiring review; and (iii) only guide authors to add citations from the editor’s journal” (Wilhite & Fong, 2012, p.542).

<sup>17</sup> Most commentators would surely agree with this but for a somewhat contrary view, see Krell (2010).

<sup>18</sup> See <https://editorethics.uncc.edu/editor-ethics-2-0-code/> (accessed on 29 July 2015).

<sup>19</sup> Examples in one innovation journal include editorials in successive years entitled ‘What are we looking for?’, ‘Determining fit between research and journal ...’, ‘What does journal fit and focus look like ...’, and ‘What’s hot and what’s not’, each citing large numbers of recent articles and hence boosting the JIF.

published in the previous two years. Thus, for a journal with a JIF, say, of 1.0, this single editorial will raise it to 2.0 (i.e. a 100% increase).

Once it became apparent that some editors were adopting aggressive tactics to increase the number of citations to their journal through ‘coercive citations’ or through publishing editorials containing large numbers of journal self-citations, ISI/Thomson Reuters introduced various checks. Journals with an anomalously high rate of within-journal self-citation, or where the rate of journal self-citation rose appreciably in one year, ran the risk of being delisted (Thomson Reuters, 2014). However, as the rules tightened, so the ruses devised to inflate JIFs grew more sophisticated. In particular, editors who were also associated with another journal began to use their position to encourage authors in that second journal to add references to the first (and vice versa). Allegations about such citation circles are difficult to prove, but several well substantiated cases have come to light (e.g. van Noorden, 2013).

In 2014, Thomson Reuters spotted an anomalous pattern of citations between three management journals (what it terms ‘citation stacking’). The *International Entrepreneurship and Management Journal* (IEMJ) had recently acquired its first JIF and impressively high it was, too! Investigations by Thomson Reuters revealed two stratagems had been used to manipulate that JIF. The first was for certain individuals to volunteer as Guest Editors for Special Issues in *The Services Industry Journal*, giving an opportunity to ‘persuade’ contributing authors each to add a dozen or so references to articles published in IEMJ in the last two years. The other was for a number of people who were editorial board members of both IEMJ and a third journal (*Management Decision*) to use the opportunity to encourage submitting authors to cite recent articles in the other journal. The result was that IEMJ emerged from relative obscurity, bursting into the rankings for Management journals in 4<sup>th</sup> position with a barely believable JIF of over 5.<sup>20</sup> Such cynical JIF manipulation was deemed unacceptable by Thomson Reuters, who suspended not only IEMJ but also the other two journals.<sup>21</sup> The formulation of rules against such citation cartels suggests this form of activity to boost JIFs should be regarded as academic misconduct. Indeed, like coercive citation, it is

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<sup>20</sup> On its return after suspension, IEMJ obtained a more credible score of just under 0.75.

<sup>21</sup> See [http://web.archive.org/web/20141021080338/http://admin-apps.webofknowledge.com/JCR/static\\_html/notices/notices.htm](http://web.archive.org/web/20141021080338/http://admin-apps.webofknowledge.com/JCR/static_html/notices/notices.htm) (i.e. the JIF results for 2014 retrieved from the Web archive – accessed on 29 July 2015). Further details of the scam can be found in Davis (2014).

now expressly prohibited under Article I of the Editor Ethics Code mentioned earlier.<sup>22</sup>

### **The ‘online queue’ stratagem**

A new stratagem for inflating one’s JIF has more recently come to light, although it has apparently been operating for several years.<sup>23</sup> A leading management journal (at least in terms of its JIF) was observed to have an unusually long queue of papers that are available online but yet to be fully published (i.e. with an issue and page number). Such an online queue has several considerable benefits with respect to the JIF.

1. If the online queue is, say, around two years long, then this doubles the number of papers that can be cited during the two-year JIF citation window without affecting the denominator.<sup>24</sup> Then, when an online paper is finally published two years later, it counts again for a further two years towards the JIF. Thus, a paper made available online towards the end of 2010 counts in the 2011 and 2012 JIF calculations (but not in the denominator); if it is then published at the start of 2013, it counts towards the 2014 and 2015 JIF. The net effect is thus to potentially double the JIF (*the JIF doubler effect*).
2. Citations to a paper tend to build up slowly in Years 1 and 2 and then accumulate at a much faster rate in Years 3 and 4. By holding a paper in the online queue for two years, when it is finally published, it is then earning citations at the Year 3 rate. Papers in Year 3 typically earn about the same number of citations as in Years 1 and 2 combined, and the Year 4 figure is broadly similar.<sup>25</sup> Hence, the net effect of this is to add a further 50% or so to the doubling effect described above (*the JIF accelerator effect*).
3. The astute editor, when deciding which papers in the online queue should be chosen to publish in the next issue, can ‘cherry pick’ those accruing citations at a faster rate. Conversely, those online papers still earning few citations can be left in the online queue where, because they do not count in the JIF denominator, they do not ‘dilute’ the JIF. If

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<sup>22</sup> See <https://editorethics.uncc.edu/editor-ethics-2-0-code/> (accessed on 29 July 2015).

<sup>23</sup> The author stumbled across it by accident in trying to track down the full published reference for an article published online 15 months earlier (see Martin, 2015b).

<sup>24</sup> For confirmation that citations to online papers do indeed count towards the JIF numerator, see the Sage website ([http://online.sagepub.com/site/sphelp/SageColl\\_PAP.xhtml](http://online.sagepub.com/site/sphelp/SageColl_PAP.xhtml) - accessed on 5 August 2015) or the website of one of Wiley’s journals (<http://www.biometrics.tibs.org/fpdoi.htm> - accessed on 6 August 2015).

<sup>25</sup> The data here come from the management journal with a particularly long online queue.

the editor has available a queue, say, of two years-worth of papers from which those to be published in a given year are to be chosen, and if the top 50% most cited papers are indeed chosen, then for a typical journal<sup>26</sup> these earn approximately twice as many citations per year as the bottom 50% (least cited) papers (i.e. a third more than the overall average). Hence, this stratagem offers the possibility for a further 30% increase of the JIF (*the JIF cherry-picking effect*).

4. Finally, a really smart editor might leave some of the highest cited papers in the online queue until he/she is ready to compile the January issue at the start of the calendar year. That way, these papers would have the longest possible time to accrue citations before the JIF window closes. Since papers published in the first of the two years included in the JIF 'window' tend to predominate in contributing to the JIF calculation, the effect is to give the most cited papers 23 months to contribute rather than an average of around 17 months. Hence, if an editor was able to implement this strategy successfully, it could add up to another 30% or so to the JIF (*the JIF front-loading effect*).

There is, however, one peculiar 'down-side' to having a long online queue. This is to deny the journal those citations from the online papers to other recent papers in the same journal (Thomson Reuters only scans published articles for citations). Indeed, if all papers were held in the queue for at least two years, the within-journal self-citation rate would drop to zero! For journals with a relatively high self-citation rate of, say, around 50%, this would halve the number of citations to the journal and hence its JIF. Consequently, the online queue stratagem would make little sense to such journals. However, the negative effect of losing these self-citations will be much less serious for a journal, say, with a self-citation rate of 10%. Typically, leading management journals have a self-citation rate of 10% or less, so the online queue will be much more tempting for these. For them, the only worry is that the online queue then reduces their self-citation rate to such a low figure that it might then attract suspicion.<sup>27</sup>

Adding all the above effects together (and even accepting that for practical and other reasons

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<sup>26</sup> See previous footnote.

<sup>27</sup> There is an analogy here with drug cheats in athletics. In their efforts to 'beat the system' in a test for a particular banned substance, they may end up with a suspiciously low reading for some other chemical.

not all the benefits can be exploited to the full), one can have a potentially huge effect on the JIF, increasing it several-fold. Most importantly, no ‘rules’ have apparently been broken! There is nothing to say that a journal has to convert an online paper to a fully published article within a set time. Indeed, some journals argue that such a waiting list is the inevitable consequence of being a top journal where competition for a published ‘slot’ is high – in other words, they make a virtue of the lengthy delay. In short, just as clever accountants find sophisticated ways to reduce or avoid paying taxes while not breaking any rules so that the end-result is classified as ‘tax avoidance’ rather than ‘tax evasion’, so certain journal editors have now hit upon a way of manipulating their JIF without apparently infringing any rules. Such a stratagem would probably not work in fast-moving scientific fields where the pressure is on to publish quickly; if held in a queue for one or two years, there is a major risk of being ‘scooped’ by a competitor.<sup>28</sup> But for social sciences like management studies, this is less of an issue. Some editors seem prepared to risk the annoyance of authors held in the queue for the sake of substantially boosting their journal’s impact factor during their period of office. This simple, even elegant stratagem to boost the JIF has rarely been mentioned in the numerous editorials and other publications dissecting JIF abuses. One exception is Vanclay (2012, pp.226-27), who notes that

“the disconnect between the 2-year window of [JIF] and the decade taken for some journals to peak [in terms of the annual citation rate of its articles]... introduces yet another way to manipulate the [JIF] by allowing contributions to appear informally online before releasing the official date-stamped print version. Such a practice offers little advantage for a journal that peaks early (e.g., *Nature* ...), but may substantially alter the [JIF] of slow-to-peak journals ...”

In addition, Tort et al. (2012) have investigated the effect of delays between online and full publication in artificially inflating JIFs for neuroscience journals, but apart from that, few other specific examples of the online queue stratagem have apparently yet come to light. However, as in the case of other practices to manipulate JIF<sup>29</sup>, the editors of certain management journals seem to have been at the forefront of exploiting this JIF-boosting

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<sup>28</sup> In disputes over precedence, priority is traditionally determined on the basis of the date of publication rather than the more nebulous date of when a paper was first made available online.

<sup>29</sup> As Wilhite and Fong (2012, p.543) note, “Coercive self-citation ... is more common in the business disciplines than in economics, sociology, and psychology”.

‘innovation’. One leading management journal (in the top half dozen in terms of JIF) at the time of writing (September 2015) had an online queue of 160 papers stretching back not two but nearly three years, while two other eminent ones had queues of 15 and 12 months respectively.<sup>30</sup> This is ironic as management journals have devoted much effort in recent years to speeding up the review and editing process, shaving months off this (putting greater pressure on reviewers and authors in the process to achieve this), only to then hold up authors at the final stage of publication for a year or more.

Does the development of a prolonged online queue constitute academic misconduct?

Probably not, since as noted earlier no rules have seemingly been broken.<sup>31</sup> But does it constitute inappropriate or dubious conduct? Well, that depends on how the editors who have been using the online queue to boost their JIF would respond if one were to suggest publicly naming them. If they truly believe that their behaviour has been completely appropriate, then presumably they can have no objection to being named. However, if they feel uncomfortable with that prospect, then one can only conclude that they, too, recognise that what they have done represents at best dubious, and at worst inappropriate, behaviour.

Where does *Research Policy* stand with regard to the procedure for handling its online queue? In the past, RP editors determined which articles were published and when. The broad strategy was to keep the queue as short as possible, just long enough to ensure there were sufficient articles to fill the next issue. However, in recent years Elsevier has moved to a new system of ‘article based publishing’. In this, once authors have corrected their proofs and Elsevier has completed the necessary changes and checks, an article is placed in the next issue and given the next available page number. Hence, with the exception of papers prepared for a Special Issue (which must wait until a new issue becomes available so they can all be grouped together), there is only a very short online queue of papers consisting of those where

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<sup>30</sup> In addition, a journal concerned with ethics in business had an online queue of no less than 600 papers at the time of writing (September 2015). (The same journal appears in Table S12 in Wilhite & Fong, 2012b).

<sup>31</sup> Some, however, might see the use of a prolonged online queue as in breach of Article I of the Editors Ethics Code referred to earlier (which rules out “inappropriate citation inflation practices”), or perhaps more specifically Article III. The latter stipulates “Fairness to authors” and under this includes an explicit commitment to “the timely dissemination of published work” (see <https://editorethics.uncc.edu/editor-ethics-2-0-code/> (accessed on 29 July 2015)). Whether asking authors to wait up to three years between acceptance and final publication constitutes “timely dissemination of published work” is a moot point.

some residual issue (e.g. copyright) is being resolved. This removes any possibility of editors manipulating JIF through this means.

## **Conclusions**

As competitive pressures on journals and their editors have grown, so the temptation to engage in ever more elaborate ‘games’ to raise the JIF have increased. Some of these clearly involve misconduct (coercive citations, journal cartels), while others are borderline – they may not necessarily breach any rules or norms but are certainly open to question.

All this raises three fundamental issues. The first is that the JIF would now seem to have little credibility as an indicator of the academic standing of a journal (even assuming it ever had). Besides all the technical problems (the 2-year citation window being too short for most fields, the asymmetry between the JIF numerator and denominator, the inappropriate use of an arithmetic mean for a highly skewed distribution, the spurious precision implied by quoting JIF values to 3 decimal places), we currently have a whole slew of editorial practices to boost JIF by fair means or foul. Consequently, in many cases all that the JIF indicator now measures is how assiduously a journal’s editors are playing the JIF ‘game’ (Metze, 2010, p.939) and their willingness to steer as close as possible to, and perhaps even to cross, the boundary between appropriate and inappropriate behaviour in pursuit of that goal.

It is well known that, as soon as one attempts to measure a system, that system changes. In social systems, intelligent actors, once they realise they are being measured and become familiar with ‘the rules of the game’, tend to change their behaviour in order to maximise their score. From the world of economics, we know that when a particular indicator becomes the focus of attention or more specifically a ‘performance target’, it rapidly loses its credibility and utility for measuring the phenomenon it was originally supposed to capture.<sup>32</sup> While the JIF, when introduced several decades ago, may initially have had some credibility as an indicator of the relative standing of journals, it has now surely forfeited that. As the San Francisco Declaration on Research Assessment stated in 2013, we need to

[g]reatly reduce [the] emphasis on the journal impact factor as a promotional

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<sup>32</sup> This is often described as Goodhart’s Law. Goodhart (1975; 1984, p.96) originally formulated it as follows: “whenever a government seeks to rely on a previously observed statistical regularity for control purposes, that regularity will collapse”.

tool, ideally by ceasing to promote the impact factor or by presenting the metric in the context of a variety of journal-based metrics ... that provide a richer view of journal performance.<sup>33</sup>

Secondly, this analysis of editors' responses to the JIF game provides an interesting case-study of how in a competitive environment, whatever the codified rules of behaviour, smart players will always try to find ways of 'bending' those rules or otherwise beating the system. The archetypal example of this, as noted earlier, is to be found in the area of tax avoidance. All individuals and institutions are expected to abide by government rules on tax. Failure to do so constitutes tax evasion, a serious offence. However, when the stakes are high, rich individuals and large companies will go to great lengths to find ways round those rules. Such 'tax avoidance' schemes are regarded as legal, even though the intent is the same as in tax evasion, namely to reduce or avoid paying taxes. Yet those who have engaged in tax avoidance dislike being publicly identified, which indicates that they feel uncomfortable with their behaviour. Likewise with editors' ingenious efforts to inflate their JIF while seemingly staying within the rules; if such editors feel uncomfortable at the prospect of their activities being publicly exposed, then this is surely evidence that those activities come in the category of inappropriate or at least questionable behaviour.

Thirdly and finally, the JIF-enhancing stratagems of editors are but part of a wider problem of misconduct and inappropriate behaviour in the academic world. All the evidence suggests this is on the increase, driven by increasing competitive pressures to 'perform'. If we are to stem the tide, then those who try to uphold the rules must themselves abide by those rules, if not a higher standard. Thus, university faculty who instruct students about the rules, say, on plagiarism, must strictly adhere to those same rules, otherwise they lose any credibility in their efforts to enforce them. Likewise, journal editors are required to enforce the rules regarding misconduct on authors. When authors transgress, editors need the necessary authority to uphold the rules and impose sanctions where necessary. If editors themselves are engaging in inappropriate or dubious behaviour, they will surely be seen as lacking in credibility and authority. One of the main bastions holding back the growing scourge of

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<sup>33</sup> See <http://www.ascb.org/dora/wp-content/uploads/2015/07/SFDeclarationFINAL.pdf> (accessed on 14 August 2015). Following the DORA declaration, various proposals have been put forward for developing alternatives to JIF such as publishing the distribution of citations (Pulverer, 2015).



research misconduct will then have been breached. The consequences could be untold.

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