

Issues of work-life balance among *JASIST* authors and editors

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Abstract Many dedicated scientists reject the concept of maintaining a “work-life balance.” They argue that work is actually a huge part of life. In the mindset of these scientists, weekdays and weekends are equally appropriate for working on their research. While we all have encountered such people, we may wonder about how frequent this condition is in other scientists in our field. This brief communication probes the degree of work-life balance issues among *JASIST* authors and editors. We collected and examined the publication histories for all 1,533 of the 2,402 papers published in *JASIST* between 2001 and 2012. Although there is no rush to submit, revise, or accept papers, we found that 11% of these events happened during weekends and that this trend has been increasing since 2005. Our findings suggest that working during the weekend may be one of the ways that scientists find to cope with the highly demanding era of “publish or perish.” We hope that our findings will raise an awareness of the steady increases in work among scientists before it affects our work-life balance even more.

Keywords Work-life balance · Workaholism · Scientists · Publication history

Introduction

A decade ago, Guest (2002, p. 255) was already stressing that “work-life balance has become an important topic for research and policy.” We use the concept of “work-life balance” here in preference to that of “workaholism,” largely because the concept of workaholism has a more specific usage than we intend here, particularly in the areas of occupational and industrial psychology (see, e.g., Andreassen, Griffiths, Hetland, & Pallesen, 2012; Harpaz & Snir, 2003; Ng, Sorensen, & Feldman, 2007; van Beek, Taris, & Schaufeli, 2011). In a recent

Supporting Information Additional Supporting Information may be found in the online version of this article: Appendix S1, see http://www.irit.fr/publis/SIG/2013_JASIST_CH.xlsx

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study, Wang et al. (2012) attempted to investigate this work-life balance among scientists. Instead of relying on classical methods, such as questionnaires or interviews, they suggested monitoring a prominent activity for any scientist: searching the literature. Thus they recorded the worldwide downloads of research papers published online by Springer for a period of five weekdays and four weekends in mid-April 2012. Subsequent data-mining performed on the 1,800,000+ downloads suggested that many scientists worked overtime, especially during the weekends. And more recently, Magnone (2013) examined the publication records of 660,191 scientific articles published from 1990 to 2010 and available from Elsevier's *ScienceDirect*, in order to show that scientists published practically every day of the week, including weekends and holidays. Whilst the methods used by these authors are appealing with regard to their original use of publicly available metadata to better understand the rhythms of scientists, at least three caveats should be raised concerning their assumptions:

- An unknown number of downloads may have been performed by programs instead of people. For instance, web search engines rely on indexing programs that harvest the contents of web pages. This may explain the “extremely abnormal” number of downloads that were recorded by Wang et al. (2012) for Tianjin city during a 10-minute time. These outlying values were eventually discarded. Still, less aggressive programs may have performed downloads that might not have been detected and then discarded from the study.
- Downloading a paper does not always imply that it is read. For instance, scientists may download papers in their office at university before going home, simply because most of Springer's papers stand behind a paywall whose access is only granted to university networks. As a result, the number of people working during the weekends might have been underestimated.
- Finally, the nine-day lifespan of the study by Wang et al. (2012) may have been too short a period to obtain results that would apply to the whole year. Our own study (see below) and that of Magnone (2013) show that special events (e.g., conference deadlines, Spring breaks, national holidays) may have biased their study.

In this brief communication, we intend to investigate the work-life balance of scientists, while overcoming some of the above concerns. Unlike Wang et al. (2012), we do not rely on real-time downloads as a trace of scholarly dedication to work. We rely instead on the analysis of the publication history printed on every published paper. This informs the reader about when the paper was originally submitted, revised for the last time following the referees' comments, and then accepted by the journal's editor. Of course, these events may happen on weekdays, weekends, and during public holidays.

Nonetheless, it seems reasonable to assume that there is no actual rush to submit or revise a journal paper as far as the authors are concerned—although some might like to get on with it because of upcoming commitments. Likewise, there is no rush to accept a paper as far as editors are concerned. Yet, despite these factors, the data suggest that many authors and editors will be working during the weekend. We believe that working during the weekend on tasks that could be deferred without serious consequences until the next week starts (i.e., two days later at most) can be considered as an example of scientists maintaining an inappropriate work-life balance. This brief communication reports on the traces of these problems that we found among the *JASIST* community. We hope that our findings will raise an awareness of the steady increase in weekend working among such scientists, and how this might affect their work-life balance in the long run.

Data and method

This study relies on publication metadata that are publicly available on the *JASIST* website.¹ Besides appearing on the first page of each *JASIST* publication, the “publication history” of papers published since 2001 is also provided on their dedicated webpages. Histories are comprised of the following metadata, with example values from (Oyarce, 2008).

- Manuscript Received: 24 JUN 2007
- Manuscript Revised: 31 DEC 2007
- Manuscript Accepted: 1 JAN 2008
- Article first published online: 14 MAY 2008
- Issue published online: 9 JUN 2008

Note that these dates are assigned by *JASIST*'s editorial manager (called *ScholarOne*²) upon manuscript reception, revision, and acceptance with no third person involved.

Our study is concerned with the first three fields: dates of manuscript submission, revision, and acceptance. Papers published in *JASIST* usually go through two or three rounds of revision (Cronin, 2009b, 2011). Notice, however, that only the date of last revision before acceptance is provided in paper and online issues.

We extracted the publication histories of the 2,402 papers that were included in issue 52(5) of 2001 to issue 63(11) of 2012. Notice that publication histories were inconsistently reported prior to issue 52(5). Next, 839 papers with missing dates for one or more of the considered fields were discarded. These were mostly book reviews, editorials, errata, letters to the editor, and obituaries. Another 30 papers were discarded due to chronological flaws. For instance, Kim (2009) appeared to have revised her manuscript (28 APR 2008) before she initially submitted it (26 SEP 2008). Eventually, we determined the name of day in the week for the remaining 1,533 valid *JASIST* papers. All these data are released as online Supporting Information (Appendix S1).

Results

We first discuss how author- and editor-related events are balanced between weekdays and weekends. Then, we take a broader perspective in studying these events longitudinally to determine if there have been any increases in weekend working over time.

Daily submissions of *JASIST* authors

If authors consider all days equally appropriate for work, then the distribution of the original submissions per day would be uniform. This is clearly not the case, as the distribution is positively skewed instead (Figure 1). Weeks are clearly divided into two parts according to these data. Authors initially submit their papers more during weekdays than during weekends. Nonetheless, there is a slight decline in the number of submissions as the week elapses, and weekends show 11% of all incoming submissions.

The distribution of the final revised versions received per day (Figure 2) is similar to the distribution of initial submissions. Revised versions were also posted throughout the week,

¹ [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1532-2890/issues](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1532-2890/issues)

² <http://mc.manuscriptcentral.com/jasist>

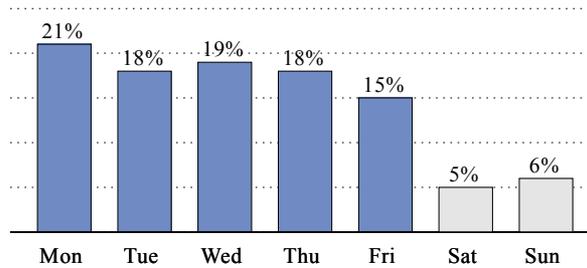


Fig. 1 Percentages of new submissions posted by authors by days of the week (percentages are rounded).

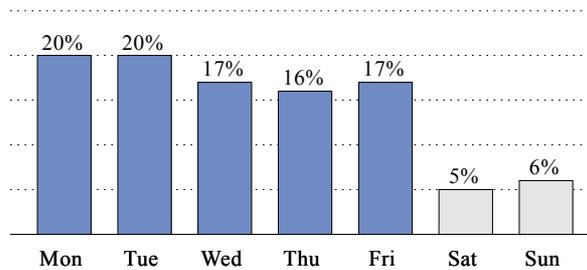


Fig. 2 Percentages of final submissions posted by authors by days of the week (percentages are rounded).

but with a slight preference for the beginning of the week. Again, several authors spent parts of their weekends revising and submitting papers, since 11% of the completed versions were posted on Saturday and Sunday.

We wondered if the submissions and revisions happening during the weekends were higher for single authors. It might be expected that weekends would be chosen more by single authors to advance their research, as they might enjoy the lack of interruptions from family, co-workers, other clerical work, or teaching duties. Among the 1,533 papers under study, 29% ($N = 449$) are single-authored papers. However, the significant and strong relationship ($r^2 = 0.98$, $p < 0.001$) between the distributions of revised and submitted papers of multi-authored *versus* single-authored papers does not support this hypothesis: the rhythms of solo *versus* collaborative researchers do not differ significantly.

Our study of submission and final revision dates thus revealed some trends among *JASIST* authors. It must be remembered that there is no deadline for submitting a paper to *JASIST*, and authors are allotted a whole year to improve and resubmit their manuscript. Thus, there is no time pressure, no rush, in submitting or revising papers. And yet, 11% of submissions and revisions happen during weekends.

Weekend working among *JASIST* editors

Two Editors-In-Chief managed *JASIST* during the period under study (2001–2012). Donald H. Kraft served from 1985 to 2008 (Meadow, 1984), and then Blaise Cronin took over in

2009 (Cronin, 2009a). The distribution of the acceptance dates by the two editors (Figure 3) shows a peak on Mondays. This peak may result from them handling authors' revisions submitted during the previous weekend. Traces of weekend working were also found among *JASIST* editors. Figure 3 suggests that editors sent 7% of all notifications of acceptance during weekends. Unfortunately, there is no way to refine this study by differentiating when rejection happened: directly without review (about 30% of the time according to Cronin (2009b)) or after several rounds of review. However, a final example of anecdotal yet indisputable evidence of working during the holidays lies in three papers (Lazarinis, 2007; Stvilia, Gasser, Twidale, & Smith, 2007; Talja, Vakkari, Fry, & Wouters, 2007). These three *JASIST* papers were accepted on December 25th, 2006, which is a national holiday in the US home of the journal's Editor-In-Chief.

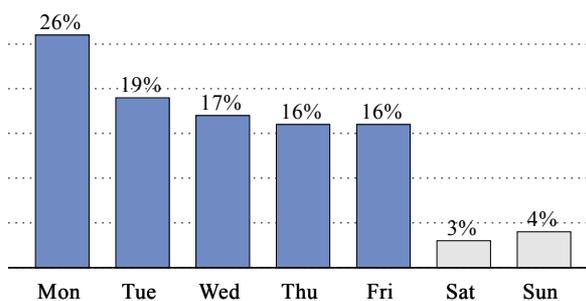


Fig. 3 Composite data from two *JASIST* editors showing the percentages of manuscript acceptances by days of the week (percentages are rounded).

Longitudinal study of changes in work-life balance in *JASIST*

Having found evidence of issues of work-life balance in the *JASIST* community, we wondered about the evolution of this condition among *authors*—the case of *editors* would include too few people to be informative and, moreover such people are deemed to be incurable workaholics (Aguinis et al., 2010)!

Figure 4 shows the balance of the number of original submissions and final revisions from authors between weekdays and weekends for 2001–2012. While the weekends used to be quiet up till 2004, the data suggest an increase in paper submissions and revisions during the weekends since then. This phenomenon has been increasing by an average of 3% a year since 2009. Overall, the number of submissions and revisions during weekends has been increasing by a 1% margin per year, as showed by the linear regression plotted as a solid line, and this year (2012) it reached 20%.

The findings of the present study complement those of Wang et al. (2012), who probed research activity in April 2012 through the study of paper downloads from the Springer's digital library. Although seeking to explain this phenomenon is beyond the scope of this study, we may speculate that the globally increasing pressure to “publish or perish” is a factor producing these hard-working weekenders (Garfield, 1996).

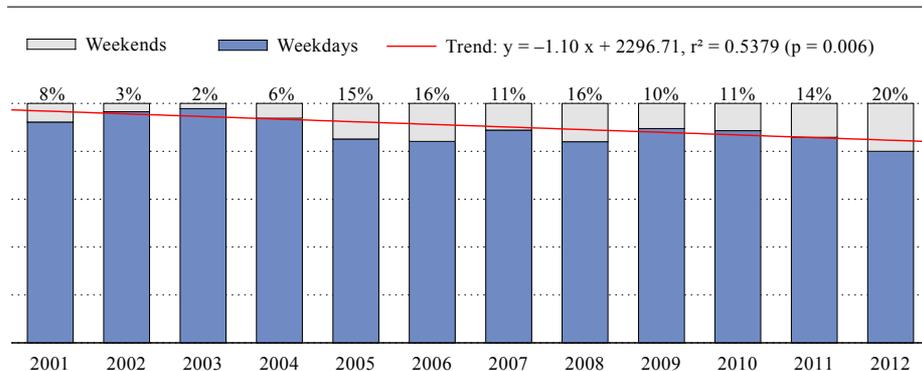


Fig. 4 Evolution of the percentages of new submissions and final submissions posted by authors during weekdays and weekends between 2001 and 2012.

Limitations

This study has mined publication histories in order to raise our understanding of the work-life balance of scientists. It should be stressed, however, that the dates that we retrieved must be considered in the light of *ScholarOne*, whose server is located in New Jersey, USA according to the `traceroute` command.³ We also know from Cronin (2010, 2012) that more than 50% of the *JASIST* papers come from outside the USA. For authors who were in different countries and time zones than *ScholarOne*'s (i.e., UTC -5), the date d recorded by the system may differ from the date d' experienced by the author in his/her time zone by a one day margin at most, i.e. $d - d' \in \{-1, 0, 1\}$. For instance, a manuscript submitted from France by the first author (a workaholic scientist) on Saturday at 4 a.m. would get recorded on Friday at 10 p.m. in New Jersey. Unfortunately, we were unable to account for difference in countries and time zones, since exact timestamps and *ScholarOne* user location at submission, revision, or acceptance are undisclosed. We do not think that this particular problem is likely to have affected our results a great deal, but the possibility has to be borne in mind.

No doubt, our study actually underestimates the amount of work completed by *JASIST* authors, as we only assessed this through a weekday *versus* weekend dichotomy (and we assumed that it is universal practice to rest during the weekend when, of course, in some cases it may not be so). Further, some authors may have submitted papers during weekdays when they are on holiday. Ladle, Malhado, and Todd (2007), for instance, using Google Scholar, found a 600% increase in the number of submissions received on Christmas Day in 2006 compared to the same day in 1996. The paper by Oyarce (2008) provides yet another extreme example of a dedicated author and editor. According to our data this revised *JASIST* paper was submitted on December 31st 2006, and accepted on January 1st 2007!

Summary and Conclusion

This brief communication has investigated the work-life balance of scientists from the perspective of their publication histories. We have focused on the case of *JASIST* authors and editors. Appendix S1 presents the data that we collected and release as an online Supporting Information. A dichotomy between weekdays and weekends was introduced as a proxy for

³ <http://www.openbsd.org/cgi-bin/man.cgi?query=traceroute>

“work” and “life.” Possible evidence of increases in “work” at the expense of “life” was recorded for submissions, revisions, and acceptance of manuscripts during the weekends. It was assumed that the work could normally have been deferred to the following week since *JASIST* does not set any deadlines for paper submission, and allots a whole year to researchers for revision. Nonetheless, we found that 11% of manuscript-related events happened during the weekends. This finding is in accord with Wang et al.’s (2012) results about overworking scientists. Finally, our longitudinal study of the past decade showed that working during weekends has been increasing among *JASIST* scientists since 2005. We hope that the light we have shed on these issues will raise readers’ awareness of these problems and how they might affect them. But it is hard not to forget that, for some:

Work is play when it’s something you like.

Andy Warhol (1928–1987)

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