

How to Motivate a Reviewer? Creating Best Practices to Implement a Successful Relationship Between a Journal and a Reviewer.

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Abstract:

A scientific journal has four main consumer groups: Readers, authors, reviewers and editors. Especially reviewers are very important, because they are expected to work for a journal without a typical reward like a salary. Without these well qualified researchers scientific quality management is not possible. But, how to motivate reviewers? Are there any studies or experience reports for this research question? Is it possible to adopt proved strategies from scientific articles and from CRM to motivate reviewers?

This contribution consists of a state-of-the-art overview about literature on scientific reviewer motivation and introduces motivation frames/incentives. Next, we present a short analysis of reviewer's behavior in the context of the journal XX¹ by conducting a survey. Finally, we discuss trade-offs with the reviewer incentive systems and develop guidelines to motivate reviewers with help of our experiences, the survey results and findings of a discussion on the conference YY2019¹.

Keywords: Reviewer Motivation, Scientific Publishing, Guidelines

Track: Relationship Marketing

¹ Placeholder used instead of the real name (because of identifying information)

1. Introduction – The Importance of Reviewer & the Term “Motivation”

The scientific publication process is important to ensure the quality of scientific results. Scientists wish to receive fast reviews with a high quality, but on the other side, they know, because of their own personal experience, how complex reviewing of a scientific article is. In the daily operative process of a typical scientific journal a user has one of the four roles: Readers, authors, reviewers and/or editors. A user can be part of more than one group. In the



Figure 1. Consumer Roles in the Scientific Process

best case, during his career (with growing scientific experience) a customer is participating in all groups. In this context, we consider the special role of the reviewers. A reviewer creates feedback for the editor and the author by reviewing an article. To ensure the quality of the review process, (potential) reviewers need knowledge and experiences in the scientific environment. There is often little or no time for reviewing in the daily business of researchers and no direct gain for reviewing of a paper. But is there another incentive to

do this? Next, only researchers with enough experience in the scientific field are able to review an article. Although, young scientists are often motivated to review an article, they normally are not able to do a review completely by themselves or else the quality is not as high as the quality of a review done by a more experienced scientific researcher. Because of the management and our experience of the scientific and organizational processes of a data science journal, we know that it is often problematic to acquire reviewers and we know, every scientific journal needs a high number of good reviewers (at least two for each article). For this reason, this contribution considers the question "How to motivate reviewers?".

Motivation is the reason, why a person is acting or behaving in a particular way. It includes the person's willingness and goals. To be motivated means to be moved to do something (Ryan & Deci, 2000b). Motivation is highly valued in all parts of life, because *motivation produces* (Ryan & Deci, 2000a). Motivation theory distinguish between intrinsic and extrinsic motivation. Intrinsic Motivation means a person really wants to do something without an incentive from a third party. Intrinsic motivation refers to doing something because it is inherently interesting or enjoyable (Ryan & Deci, 2000b). The driving force for the Extrinsic Motivation is an external stimulus. A person is extrinsic motivated to do something because of an incentive (e.g. salary, earn social respect, have social compassion, fear of punishment). Mostly, the driving force for a reviewer is a combination of intrinsic and extrinsic reasons.

1.1 Method

First, we review the state-of-the-art for reviewer motivation. Next, we designed and conducted a survey based on state-of-the-art and our own experiences with the quality management of the journal XX to find out, how to motivate reviewers. The participants of the survey are reviewers of XX. Also, we considered different motivation incentives and CRM strategies to motivate customers and checked the transferability of these guidelines of the reviewer environment of XX. On basis of the results of the literature research, the CRM findings and the survey results, we developed customized guidelines for scientific journals. At the conference YY2019 we discussed these guidelines with a group of scientists with review experiences to increase the willingness to review and the satisfaction of reviewers, authors and editors. Our findings are transferable on every scientific journal.

1.2 Introduction of the Testing Environment – the Journal XX

The journal XX consists of two series: A and B. XXA publishes papers in the emerging field of data science and covers regular research articles from the field of data science and special issues. XXB covers scientific articles which improve methods, algorithms, and processes over the whole data lifecycle. This series is organized around data sets.

2 State-of-the-Art-Studies and Experience Reports – Discussion of Main Incentives

Many studies discuss the main incentives for reviewing an article, but only a few reports from the experiences of journals. It is important to distinguish between “scientific reviews” for journals and “product/service reviews” to find meaningful articles for our purpose. We developed these motivation incentives with the help of the overview in table 1. The motivation frames and incentives for reviewing are shown in figure 2.

Key to table 1: # = Participants; RR=Response Rate in %

Reference + Year	Method (Approach & Research Tool)	# RR	“Main” Results – Short Overview
Mulligan & Raphael, 2010	Global study *needed time approx. 15 min *invited 40000 researchers from over 10000 journals * contacted via e-mail and requested to complete the survey + reminder	4037 10%	69% of the reviewers are satisfied with the current system of peer review. The article examined the influences and attitudes of the reviewers towards peer review and found that peer review is valued, but needs to be improved., e.g. 56% feel that guidance is needed and 68% wished a formal training in peer review. Double-blind peer review is seen as the most effective form of peer review, because it seems to be the most objective and helps eliminate reviewer bias.
Squazzoni, Bravo, and Takács,	Modified version of the standard experimental	136 –	Monetary rewards decrease the quality and efficiency of the review process. This coincides with the results of other researchers (e.g. Vohs,

2013	framework “Investment Game”		Mead, and Goode, 2006; Heyman & Ariely, 2004; Bowles, 2008; Frey & Jegen, 2001).
Mulligan, Hall, and Raphael, 2013	Relates to the 5 years old study in Mulligan and Raphael (2010)	4037 10%	The responding reviewers are mostly community-focused oriented: 90% review papers to play an active role in the scientific community, and 85% just enjoy helping authors to improve their papers.
Chetty, Saez, and Sandor, 2014	Experiment over a 20-month period *Participants randomly assigned to 4 groups	1500 –	The experiment with 1,500 referees at the Journal of Public Economics shows that the shortening of the deadline from six weeks to four weeks reduces the median review times from 48 days to 36 days.
Zaharie & Osoian, 2016	Semi-structured interviews with reviewers from natural and social sciences	42 82.4%	Younger reviewers tend to apply the “self-achievement frame” while senior reviewers were rather part of the “community focused oriented frame”.
Nobarany, Booth, and Hsieh, 2016	Questionnaire *invited 1952 reviewers of submissions to conference CHI 2011.	307 15.7%	The results show which factors are important for the motivation of reviewers. The authors asked for the position, review experience, level of involvement, area of education, gender, the reasons for reviewing, and to indicate how much each of the different influences the motivation for reviewing.
Kreiman, 2016	Literature review and considering his own long experience.	– –	The article shows interesting information about the motivation to participate in the review process, an inspiring list of JSLHR (see table 4) and the has a good literature overview.

Table 1. Literature research regarding the motivation framework of reviewers

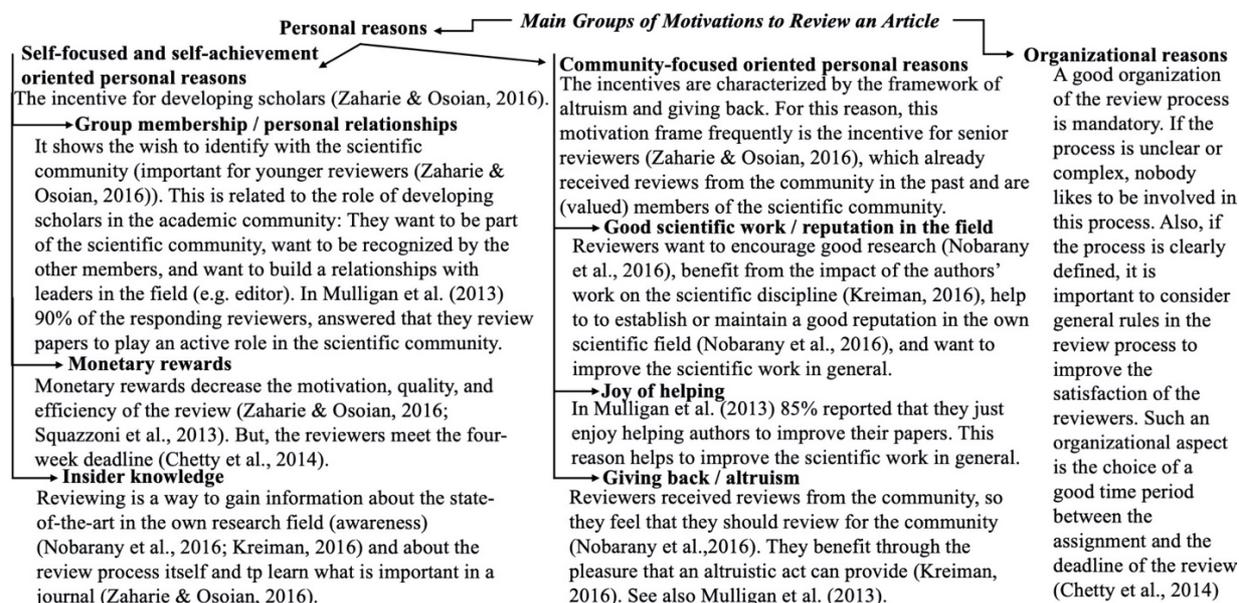


Figure 2. Motivation Incentives according State-of-the-Art Literature Research

3 Survey

The survey aims at the improvement of the satisfaction of the reviewers with XX's review process and find out, which incentives motivate existing and new reviewers.

3.1 Survey – Approach & Method

The questions are from the papers see table 1. As target group for the survey, we selected all

registered reviewers of the journal XXA. We randomly split all registered reviewers into two groups (Group 1; G1 and Group 2; G2) with 58 persons each. It is important, that only 48 (26 in G1 and 22 in G2) of the 116 contacted reviewers have completed at least one review on XXA. The other 68 invited persons are either assigned at the moment or only registered. The first group (G1) was invited at Friday, 1:46 pm via email and the second group (G2) at Tuesday, 1:46 pm via email, as well. The text of both invitation emails was identical. We sent no reminder and in the survey there was no mandatory entry. In G1, we received 20 answers of 58 invitations. This is a response rate of 33.5%. 16 of 58 invited reviewers of G2 answered the survey. The response rate of G2 was 27.5%. The overall response rate was 31.0%. Due to the small sample size the difference between the respondents in the groups is not significant.

3.2 Survey - Questions - Background & Results

Question 1: In your opinion, how many weeks are the perfect time slot to complete a review?
 (Time between assignment and deadline in weeks) [0- maxint]

Background: Chetty et al. (2014) show that a deadline of four weeks reduces the median review time. The choice of the perfect time slot seems to be an organizational tool to improve the satisfaction of reviewers and authors with the review process.

Results: Fig. 3 shows the wished number of weeks.

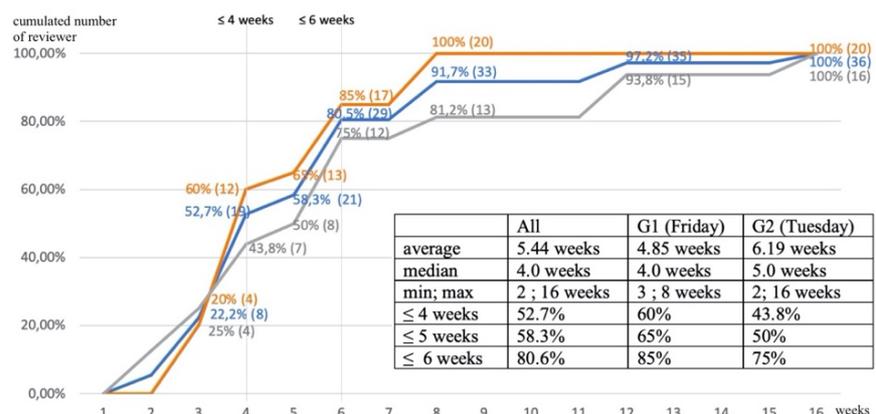


Figure 3. Results: Perfect time slot to complete a review

Question 2: Which reasons motivate you to review an article?

Background: We considered the three main incentives for creating a review in table 1. Because there was no mandatory entry, it was possible to mark any number of reasons (zero to all).

Results: The reasons are listed in decreasing frequency (importance) in table 2.

Nearly 95% of the respondents review for the community-focused reason “giving back / altruism” and 75% for “good scientific work / reputation / enjoying helping.” The other reasons are self-focused oriented reasons. An explanation for this clear order of the answers could be that most of the XX reviewers are experienced reviewers (not new (young) ones). A second assumption is, that reviewers that answered this survey are more community-focused

oriented than reviewers that ignored the invitation. This reason should also apply for the unpaid studies of other researchers. So probably, more self-focused oriented reviewers are not willing to answer a survey without a monetary reward. The results according the motivation of reviewer coincide with the results of the different studies, especially with Zaharie and Osoian (2016); Nobarany et al. (2016), and Mulligan et al. (2013).

Reasons	All	G1	G2
Giving back (I receive reviews → I feel I should review for the community)	94.4% (34)	95.0% (19)	93.8% (15)
Help other researchers to improve their work / encourage good research	75.0% (27)	75.0% (15)	75.0% (12)
Part of my job	55.5% (20)	55.0% (11)	56.2% (9)
Read new research before anyone else / I want to know what is new in my field know what is new in my field	41.7% (15)	50.0% (10)	31.0% (5)
Get insider's knowledge of the review process (Because of the knowledge about the review process, I learn about how to write more effectively)	41.6% (15)	35.0% (7)	50.0 % (8)
Include the reviews in my curriculum vitae	22.2% (8)	20.0% (4)	25.0% (4)
Enjoying critical reading	22.2% (8)	20.0% (4)	25.0% (4)
Social recognition / Social pressure	2.7% (1)	5.0% (1)	0.0% (0)
Other reasons (please comment)	11.1% (4)	10.0% (2)	12.5% (2)

Table 2. Results: Motivation reasons in decreasing importance (in per cent “%” and in persons “()”).

Question 3: Do you wish to get reminded one week before the end of the deadline?

Background: We want to know, if a reminder has a positive or negative effect? Is a reminder wished by the XX reviewers or annoying for them?

Results: A reminder seems to be wished and to add value.

Answer	All	G1 (Friday)	G2 (Tuesday)
yes	91.67% (33)	85% (17)	100%(16)
no	2.78%** (1)	5% (1)	0% (0)
maybe/no matter	5.56% (2)	10% (2)	0% (0)

** This person sets a reminder in his or her calendar by itself and reported that he or she is

Table 3. Results: Is a reminder wished (in per cent “%” and in persons “()”) ?

Question 4: How many reviews do you do in one year (on average)? [0- maxint]

Background: Zaharie and Osoian (2016) recorded that 3-4 reviews/year are done by senior reviewers and 10-15 reviews/year are written by developing scholars. Are these realistic values? We want to know, how high is the workload for the XX reviewers?

Results: It is surprising, that the values are very different.

To illustrate the results we add the box plot diagram in figure 4. The observations on XXA indicated that on average 1.73 reviews per year are done by one reviewer for

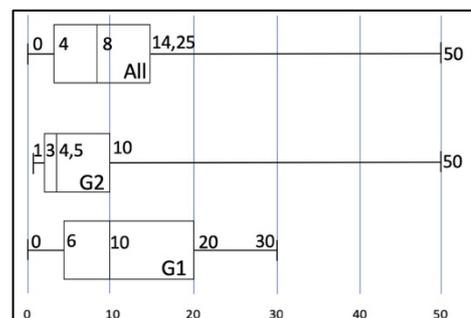


Figure 4. Reviews per year on average. 85% of the considered reviewers written less or equal to two reviews per year for XXA.

the journal XXA. The median is 1. We have a minimum of 1 (because only reviewers with at least one completed review are considered) and a maximum of 11.

Question 5: How long (in hours) do you need for one review (on average)?

Background: We are interested, how long a reviewer needs on average to finish a review and on the self-estimation of the workload of a reviewer.

Results: The results are shown in the box plot diagram in figure 5. It is surprising that the values are very different, as well. We have no observations about the needed time on average or one review of XXA.

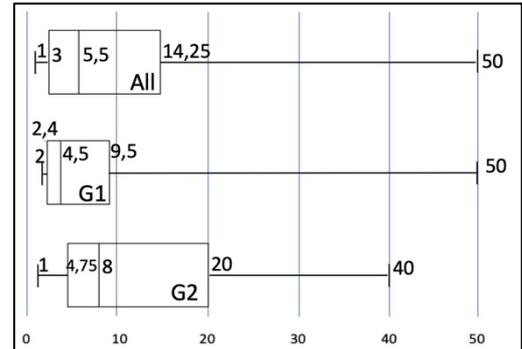


Figure 5. Hours per review on average

Question 6: Do you work in a university or in a company?

Background: To motivate the reviewer in the right way, we want to know more about the workload and the daily business life of the potential reviewer: Do the XX reviewers work in a university or a company? Are there any differences?

Results: Most of the reviewers of the journal XX work in a scientific environment:

- (a) at universities: 88.9% (32) [all]; 95.0% (19) [G1]; 81,3% (13) [G2];
- (b) at companies: 5.5% (2) [all]; 5.0% (1) [G1]; 6,3% (1) [G2];
- (c) else: 5.5% (2) [all]; 0% (0) [G1]; 12,5% (2; own company; research institute) [G2].

4. Guidelines

In this section, we show in table 4 the motivation incentives “inspiring lists” of the journal of Speech, Language, and Hearing Research (JSLHR) and of the authors Zaharie and Osoian (2016). We discuss this incentives according the applicability for the journal XX. Next, we introduce our own guidelines for XX according to the incentives introduced in figure 2. These incentives are the version after the incorporating feedback from discussion on YY2019.

4.1 Discussion of the Findings on the conference YY2019

We discussed the findings and results of the literature research and our own survey with around 20 reviewers on YY2019. A part of the reviewers was invited to do the survey. Some of the participants of the discussion answered the survey (according to own comments). We introduced our results and what we would like to change during the review process. This enables us, to get direct feedback on our guidelines and to improve them. Next, we provide

into the wishes and requirements of reviewers. In general, our ideas were well received by the reviewers. The findings of the discussion are included in the next section.

4.2 Motivation Incentives of other Journals & Authors

Inspiring list 1 (Kreiman, 2016)	Inspiring list 2 (Zaharie & Osoian, 2016)
<p>“Include it on your curriculum vitae. Get an insider’s knowledge of the peer-review process. Read cutting edge research before anyone else. Contribute further to your field. Work with other editors and associate editors. Get recognized in the print issue of the journal and online.” (Kreiman, 2016, p.481) <i>[Emphasis added]</i></p>	<p>Ensure the match between the reviewer and the topic of the manuscript; Provide reviewers with open and individual feedback with respect to the quality of their review reports; Inform the reviewers about the final publication decision of the manuscripts they evaluate; Focus on the pre-selection stage, by screening out the papers that do not meet a certain standard." (Zaharie & Osoian, 2016, p.78) <i>[Emphasis added]</i></p>
<p>These points are oriented to (rather) self-focused reviewer. The list seems not suitable to motivate senior reviewers. For these reasons, XX does not want to publish such a list on its own website. But some points seem to be interesting to motivate rather self-focused oriented reviewers (perhaps developing scholars). E.g. we will discuss, the wish to include a certificate in the CV on the conference YY2019 (see 4.1)</p>	<p>All these points are (rather) organizational oriented reasons and the list seems to be suitable and useful for the journal XX, because the advices seem to be suitable to motivate senior reviewers. The journal listens to these organizational advices and implemented most of the points already. The missing points will follow shortly.</p>

Table 4. Inspiring Lists - Motivation incentives of other researchers

4.3 Discussion of Motivation Incentives for the Journal XX

Self-focused oriented personal reasons

Question 2 in the survey shows that only a few of the responding reviewers are self-focused. To gain **insider knowledge** seems an incentive for reviewing an article for nearly 42%. Next, **monetary rewards** are no option for XX, because the quality and efficiency of the review process decreases and for financial reasons.

Comments YY2019: The rejection of monetary rewards was seen as positive.

Furthermore, some reviewers would like to get a certificate of reviewing from journals. In general, the reviewers’ opinion was, that this certificate should indicate the level of efforts (number of reviews). In this connection, different reviewer recognition platforms are discussed (e.g. publons.com; possibility to collect review certificates on Elsevier,...). The predominant opinion of the senior reviewers was, that something like a certification or a recognition platform is not needed. Younger reviewers (e.g. post doctorates) are thinking about to add such an award to the CV. Public appreciation was a rather controversial topic. Whether a certificate (personal delivered) or a public appreciation is a good incentive, needs to be considered in more detail in future research. The wish to be honored for the review is a

part of the motivation incentive **group membership/ personal relationships**.

Community-focused oriented personal reasons:

Question 2 in our survey shows that most of the responding reviewers do the reviews for the community (95%). They want to **ensure the quality of the scientific work and the reputation in the field** (75%). Another motivation reason is personal contact. For example, doing a friend a favor. Our experiences (in another experiment in the journal environment) and many studies in the field of CRM show that **personal “customer contact” is important**.

Customer acquisition is comparable with the assignment of reviewers. Our experience indicates that the positive response (commitment) of new potential reviewers who get invited via personal email with a personal reference is at a level of 61.3%. The positive response by potential reviewers who get invited through the journal system by the editor of the article is only at 8.3%. This is surprising, because the invited persons and the editor had a personal relationship. So, this experience shows that personal communication matters. For this reason, we invite new reviewers via a personal contact. If we have already a “relationship” we refer to this. Next, we have shown that the motivation reason **giving back / altruism** is an important incentive. Many studies indicate that appreciation is important. Therefore, at least once a year, XX wants to appreciate the reviewers by saying “Thank you”.

Comments YY2019: The importance of honor and personal contact get confirmed.

Organizational reasons:

Adaption of the “timeslot reminder”: Chetty et al. (2014) recommend 4 weeks as a suitable timeslot (see table 1). Our experience indicates, that on average the completed reviews need 3.4 weeks (approximately 24 days), and also the survey results have shown a median of 4 weeks. But only 58% are satisfied with this deadline (see survey question 1). 80.6% would prefer a timeslot of less or equal to 6 weeks. On the other side, we have to consider the needs of the authors. Obviously, a trade-off between reviewers’ (enough time for review) and authors’ (fast review)preferences exists. XX decided to stay with 4 weeks, but grant an extension to 6 weeks on request. Furthermore, a **reminder** will be set 1 week before the end of the deadline (wished by 91.7%, see question 3).

Comments YY2019: The participants of the discussion liked the implementation of the reminder and the four-week period for finishing a review. Also, the possibility to expand the deadline, if necessary, received positively. Next, the majority of reviewers wished to read the review of the other (second) reviewer of the evaluated paper. They explained this wish with the possibility to see how another reviewer assessed the paper. Also, they wish to check, how comprehensive are the reviews of other reviewers. XX informs the reviewers about the final

publication decision of the manuscripts they evaluated, automatically in the Open Journal System (OJS), if we will give access to the other review will be investigated.

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