FRR
"The Meta of Game and Play Research in Finland: A Registered Report"
Arrived: 19.7.2024
Review round 1, Stage 1 decision 1: 27.9.2024

Henry Korkeila:

Thank you for submitting your highly interesting and ambitious manuscript, which will certainly make a valuable contribution to the Finnish meta-game research. I've now received a total of four reviews, two of which focus on topic content and another two on methodology. They all generously provide plenty of constructive feedback that can improve the study. All reviewers consider the plan worth undertaking but also point out important points of revision, which should be done before embarking on analysis.

- Perhaps as the most critical issue, sharpening the focus will be necessary. This manifests both in topic framing and methodology. It's not fully clear where the lines around the studied field are, and this reoccurs as challenges in methodology where thousands or possibly millions of entries may need to be screened and synchronised for analysis. I agree with reviewers that clarifying and narrowing the focus followed by carefully selecting and planning database searchers will lead to informative results. Major compromises will be necessary, but that's business as usual and it's good that such decisions can be assessed now (it would be difficult and laborious to rerun completed analysis afterwards).
- Related to the previous note, both topic and method reviewers wish to see clearer aims or RQs, and if this includes finding evidence for prior beliefs or hypotheses, it would be important to the state that explicitly. To be clear, it's totally ok to stress that all analyses will be exploratory, in which case the study won't make any confirmatory claims afterwards. But it's good to have that systematically clarified for all readers.
- Topic reviewers provide numerous valuable suggestions to back up the baseline literature, on which the study is built. Depending on where the focus lands, it will useful to strengthen the contextual framing with these suggestions.
- Methods reviewers provide tons of detailed help to make the analysis reliable and feasible. Please consider it carefully and pilot the databases/searchers to obtain an updated understanding of what is possible with current resources.

I stop here because the reviews are very comprehensive, but you're free to contact me via email for any questions during revision. I'll be happy to help with making this the best possible study—I'm evidently sharing a strong personal interest in seeing the results and learning more about the field.

Veli-Matti Karhulahti

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Review 1: 9.8.2024

By Veli-Matti Karhulahti's request, I have read and reviewed the article "The Meta of Game and Play Research in Finland: A Registered Report" by Henry Korkeila for RR-keskus, concentrating on the context of Finnish research on games. The proposed study is interesting, timely, and has the potential to offer significant clarity for a better (self)understanding of game related research in Finland. As the research progresses, I offer the following suggestions to strengthen the study and its eventual reporting:

1. The contextualization of the article is not fully aligned with the study plan

The data collection/analysis and the contextualizing of the research are not fully aligned. At the moment the article is rooted in the field of game studies, while potentially addressing a much wider area of studies into games and play. As such, the article would benefit from a more detailed discussion of the fields or disciplines of research into games. The current opening paragraph is a bit muddled in its attempt at setting the stage. Research into games has been carried out in numerous fields (both in fields specializing in games such as game studies, the simulation and games -tradition, gambling studies, board game studies, sports studies, play studies, as well as fields where games and play are but one topic among many such as mathematics, ethology, folklore, CHI, psychology, design, etc.) and from the introduction and background sections it is fundamentally unclear what this study will be concentrating on. The way labels such as "game studies" and "games research" are used almost interchangeably is very telling of this muddle. Indeed, the opening sentence "Game research is a relatively young field of enquiry (Mäyrä, 2008, pp. 5-11)" shows this as Mäyrä was very pointedly talking about "game studies" (rooted in humanities and social sciences), not "game research" which is used in more varied meanings. It would be helpful for the reader if there was a short section that clearly outlined what "game studies" and "game research" mean in this particular article – or then the clear coupling to the tradition of game studies was severed. Furthermore, in the same section it would be useful to discuss if this article concentrated narrowly on digital games, all kinds of games, or very widely on anything on games and play. (All of this is clear once we get to the data gathering and hypothesis stage, but then it is also clear that the introduction is not fully aligned with the research plan.)

Presenting the history of Finnish research into games in one paragraph is quite impossible (at the beginning of the Background section). The article does a decent job here. However, I am surprised that gambling (aside from a nod towards Pajazzo) is not discussed as exceptional as Finnish history and legislation is quite unique globally – and there is academic work available on the topic, for example by Pauliina Raento. A nod towards Kalevalaseura's 1981 book also would not go amiss. And I am puzzled that earliest Finnish game/play research does not mention Yrjö Hirn's Barnlek (1916).

2. Explicate limitation of the study design

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A quantitative study like this will not account for differences in the cultures of academic fields and disciplines automatically, that needs to be brought in by the researcher. When the plan states "could be revealed through an analysis of the most cited or authoring scholars", it should be somehow present in the analysis that academic fields are different, citational practices are different, and authoring practices are different. In some fields one should reference the originator of an idea, in other fields the most recent work is more important. In some fields professors put their names on all of their students' papers, in other fields a professor is only listed as co-author if they actually actively participated in a specific study (and securing funding and normal supervision are not seen as active participation). The current version of the study plan does not propose how to account for such cultural differences. And perhaps they simply will not be accounted for at all, but at minimum I would like to see an acknowledgement that this study will be comparing apples and oranges.

The definition of "Finnish research" as originating only from Finnish HEIs leaves out Finnish scholars who do not work in Finland, leaves out some of the work of scholars who work in Finnish HEIs but have not always worked in Finland, and leaves out all of the work by scholars who conduct research in Finland outside of HEIs (for example Nokia Research Center was a key hub of game-related research in Finland for several years). All delimitations have their problems, of course, but those limitations should be made clearly explicit.

3. Resolve assumptions vs. evidence

The choice of the founding of Digra as the starting point is perplexing and could be motivated better. If Digra is presumed to be a major turning-point, then that clearly prioritized certain types of research into games (digital recreational games instead of simulation, sports, or education) and it means that since that is the starting point, it is not possible to show what impact the founding of Digra had since the-Digra work has been excluded. Perhaps pushing the starting date of the data gathering to 2000 could be considered?

Center of Excellence in Game Culture Studies is, I would also assume, a key development in Finnish game studies. However, I would assume that this is the kind of study that can present evidence for this claim, and thus I would rather formulate it as a question than as a background component.

4. Minor things

In Finland, I would add consider adding journals Widerscreen and Fafnir to the list of journals to check out. I would also check that the database searches reliably report on the biggest game studies journals such as Game Studies, Games and Culture, Simulation & Gaming, Eludamos, Loading, GAME, International Journal of Play, American Journal of Play, International Journal of Role-Playing, Board Game Studies Journal, Transaction of the Digital Games Research Association, Journal of the Philosophy of Sport, Play &

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Culture Studies, Journal of Gambling Behaviour, Journal of Gambling Studies, Japanese Journal of Analog Role-Playing Game Studies, and so on.

I find the comparison of contemporary game scholars to big names like Plato, Descartes, and Newton to be rhetorically unconvincing. While the idea expressed here – certain scholars works are significantly more influential than others – is valid, the expression of the idea reads as populist in a way that takes the reader out from the argument.

I would expect the names of works (games, books, journals, etc.) to be in italics.

Review 2: 20.8.2024

The proposed registered report of a bibliometric study of game & play research in Finland can provide valuable insights into studied topics, (co-)authorship patterns, and trends in the field. Given the Finland's rich history of game culture as well as game research, the present RR is well-placed to offer highly informative and holistic insights. The introduction, theoretical background, and study objectives are clear. I have several comments and questions regarding the proposed methodology and feasibility of the study, which I believe should be clarified before proceeding with data collection. Please find my questions and suggestions below:

- The 20-year time frame (2003-2023) is justified by the establishment of the DiGRA chapter in Finland. However, as the author correctly notes, game and play research in Finland has a much longer tradition. This is well-documented by the fact that game research courses have been offered since 2002. While I understand the importance of the Finnish DiGRA platform, I suggest reconsidering the limitation of the timespan to 2003-2023 and including more historical context to capture the full evolution of the field. A sensitivity analysis could be performed for studies published from 2003 onwards. However, this is ultimately up to the author.
- The process of data collection is comprehensively described. While I'm not very familiar with Finnish national and HEIs libraries and registries, I wonder if the author has checked whether all the sources (both international databases and local ones) provide the same set of information necessary for the analyses described. For instance, if a database is missing keywords, it won't be possible to include it in the co-occurrence analysis as outlined by the author.
- Loosely following this point, databases may not be very compatible. The author has likely done some piloting, but I'm concerned that some of the suggested analyses might only be feasible with specific databases. Could the author report on the piloting and confirm that all of the proposed analyses are doable on the entire body of papers? If not, please provide information about which analyses will be done on which data. The author may be aiming to overcome the missing (meta-)data issue by extracting the missing data manually. However, this approach seems extremely laborious, as I can imagine that hundreds of documents will be included, and not all information will be readily available.

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Please don't get me wrong—I'm not trying to discourage the author. I'm simply noting these comments to help facilitate the feasibility of the study.

- Why limit the publications to English and Finnish? Given that this is a bibliometric study, I don't see many concerns related to the inclusion of other languages. On the contrary, including additional languages could provide further insights into publication patterns.
- Can the author provide more technical details regarding the data cleaning and preprocessing? For example, how will text be preprocessed (e.g., extraction of author names), and how exactly will duplicates be removed?
- Could the author provide more information on the metrics that will be reported and discussed (e.g., centrality measures in networks, clustering coefficients, etc.)?
- Could the author provide additional information on what software and/or packages will be used?

I hope that the comments and questions will help clarify the methodology and feasibility of the study. I wish the author the best of luck and look forward to reading the revised version of this RR.

Best,
Matúš Adamkovič

Review 3: 30.8.2024

The purpose of Korkeila's research is to create an understanding of game research and its development in Finland by conducting a quantitative meta-analysis of the research scene over the last 20 years (from the foundation of DiGRA in 2003 to 2023). The study will be conducted by scoping any research that is connected to games and uses keywords "gam" and "play" (Finnish and English) from libraries, national and international databases and journals. The project is very ambitious, but given the timeframe and limiting the scope to one particular geographical area and research that is either authored or co-authored by researchers affiliated with Finnish Higher Education Institutes, the paper gives the impression of a well-planned research. The researcher seems well qualified in conducting a quantitative analysis and providing new insights to the development of the game studies in Finland.

Is the text written in a way that it will be ready for publication once the results and discussion are added in Phase 2?

Suggestion: the research can proceed to the second stage; however, I would advise the researcher to pay closer attention to the research question and some of the key concepts, and add some background literature.

Is the research question relevant, and can the planned study effectively address it? Is the planned research/research question meaningful, and will it produce scientific knowledge?

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The research question is not addressed properly (or is not in the form of a question). There are some speculative questions in the introduction and the purpose, aims and objectives of conducting a meta-analysis of game research in Finland are discussed throughout the plan.

The researcher justifies the planned research adequately, stating for instance that meta-analyses are in constant need for updates and this seems to be the right time to do one. Suggestion: consider forming a clear research question for the study.

Are the methods described in enough detail to accurately assess their implementation? Are the planned methods suitable for the research?

The methods are described in enough detail and seem suitable for the research. Suggestion: The research may proceed to the second stage.

Are the assumptions reasonable, and has prior literature been carefully considered?

The study is driven by recent significant contributions to the field of game studies and the assumed development of the research in Finland. The author also points out the foundation of DiGRA, Centre of Excellence in Game Culture Studies and the emergence of game research courses in higher education institutions. This is well justified, however, this background is quite strongly focused on Tampere University, but the author should check whether there is anything about other universities worthy of mentioning.

Prior literature has been considered to some extent. The background section takes into consideration the early stages of game research conducted in Finland, and brings up some of the oldest games as examples as well as the history of games. However, the section and the previous game research cited here is quite scarce, though it starts very promisingly and the reader expects a more thorough overview. The author could add more game research before the year 2003, providing a short historical overview of the research scene in Finland. This could also benefit from recently published works.

In general, I am surprised that the author has not noted the book *Pelit kulttuurina* as one of the significant contributions to the Finnish game research and education. The author could at least check Frans Mäyrä' chapter in the book to broaden the historical background of the research. To build a supportive background, the author could also cite Jaakko Suominen's *Pajatsosta pöytätennikseen* (2023) that uncovers games and game culture in Finland between wars. Ari Saastamoinen's (2022) book *Lautapelien historia* might also be helpful in the background section.

Some of the cited references should also be explained and elaborated further, e.g. these: "documenting the historical progression and development of games, the nature of play, and the evolution of game development within the context of Finland, as referenced

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(Nylund, 2020; Nylund, Prax & Sotamaa, 2021; Saarikoski & Suominen, 2009; Sotamaa, 2021, 2023; Suominen, 2008)."

The section is strongly focused on game research although the word *play* (leikki or pelaaminen) is used in the title. The reader becomes a little confused, because the word play is used as a search word but it is unclear which Finnish term it refers to, or whether it refers to both. This should be clarified in the research goals whether the author's intention is to exclude "leikki" from the study.

If the author's intention is to include play research as part of the study (as implied in the title), I would advise adding Finnish play research background to the section. These should include references at least to Yrjö Hirn's work (Barnlek 1916; see also Sotamaa & Stenros 2021), Katriina Heljakka's research on adult play (e.g. 2013) and technologization and digitalization of play (2024). From the field of neuroscience, physiologist Matti Bergström's *Mustat ja valkeat leikit* (1997) might also be worth noting.

I was also left wondering, whether this study would benefit from defining some of its key concepts such as game studies or game research. The author points to these different terms but does not provide any clarification on them. What is meant by game studies or game research in this paper exactly? Do they differ from one another in any way, and will this research acknowledge it? Now, the paper lacks a proper definition of our current understanding of game research, which obviously can and most likely will naturally evolve and become more precise as the research progresses.

Suggestion: Broaden the background section by using suitable previous literature. Check, if the concepts would benefit from clarification.

Does the work follow best practices of open science, such as data sharing?

In this case, data sharing would most likely comprise researcher's notes and the dataset of search results. It is not mentioned if this will be in any way opened, however, the results will be more relevant and shared likely via journal that follows open science policies.
The author has also taken into account ethical considerations. It should be considered whether there are any ethical issues in drawing attention to already popular research and researchers, and whether some of the objectives might exclude researchers belonging in minorities. Suggestion: Check any ethical issues regarding research objectives.

Some other notes: The link for Suominen 2008 does not work, please advise author to check and update links.

Review 4: 27.9.2024

In this registered report stage 1, the author is proposing to explore the landscape of game/play research with focus on the Finnish academic context of higher educational institutions in Finland. The report is carefully considering what type of data is going to be

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collected and what type of analysis are going to be carried. I have outlined a few major and minor comments for the author to address.

1) This registered report does not suggest any hypothesis to be tested, except in one case. Usually the added value of registered report is to avoid potential researcher's degrees of freedom when doing hypothesis testing. In this study however the author is not going to conduct any hypothesis testing. While exploratory research can also be pre-registered (https://www.nature.com/nathumbehav/submission-guidelines/registeredreports) it would be great to consider if some actual hypotheses can be tested (e.g. - this is a toy example, I am not suggesting the author to test for this hypothesis - authors who publish in more prestigious outlet tend to work together). It is of course ok if this registered report does not perform any hypothesis testing, but then it should be written explicitly that this is an exploratory registered report. The single case that sounds like hypothesis testing is when the author writes "*Hence, I complement my analysis of keywords with a hypothesis that once the central research figures in Finnish are revealed (citedness score and authorship volume), that would also indicate some of the popular research directions in Finland. Central scholars in a field can often have a clear line of thought (e.g., a philosophical school) or grow to be considered a part of a popular line of thought or research direction.*" However it is not clear to me how this hypothesis can be quantified and what statistical test can be used to obtain an effect size and a p-value (or other Bayesian equivalent). There is another explicit mention of an hypothesis when the author writes "*I hypothesize the following: respective disciplines through a frequency analysis.*" but the statement in objective 5 is not an hypothesis.

2) In the manuscript the author uses the word "Meta-analyses" but I suppose they mean to use "systematic reviews". Meta-analysis and systematic reviews are different in nature (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5903119/). A meta-analysis is the statistical process of analyzing and combining results from several similar studies, usually by converting the effect size of the statistical result of each study, into a standardized effect size, followed by statistical methods analysis such as fixed-effects or random-effects modelling. For example one could gather all the studies studying the efficacy (=effect size) of a certain drug for a specific disease, and gather all the effect sizes from each study into a meta-analysis. In this report instead there are no statistical values from tested hypotheses extracted from each paper, instead the author is going to carry an exploratory study on the thematic patterns and authors of the Finnish game research scene.

3) The author should consider using standardised tools for conducting systematic reviews, specifically the PRIMSA guidelines should be followed.

4) Methodology, section 4.1
- the section defines the inclusion criteria for the papers. Inclusion criteria should be summarised as a table.
- Criteria 2 is not clearly objectively defined, a better definition would be "game or play must be included in the title or abstract".

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- There is no criteria on what to do when full text is not available: it might well be that the author does not need the full text since it uses only co-authorship information. This should be clarified.
- It might be more feasible to start with just peer-reviewed articles and (peer-reviewed) conference papers. Doctoral Theses have no co-authors making it impossible to extract co-author measures and the same is valid also with books or books chapter where usually there is a single author per chapter. Whitepapers and other non peer-reviewed sources can be difficult to evaluate and I would leave those for future studies on the topic.

5) Methodology section 4.2 There is no detailed explanation on how the queries are going to be run. The queries might be returning hundred of thousands of papers making the work impossible to be carried. I would be personally happy if the review only queries three large databases like Scopus, Web of Science, EBSCOhost and leaves all the other options out. More detailed comments on section 4.2 here below:

- section 4.2 1. The query should be better explained. Now it is not clear if the author is going to perform "gam* AND play*" or if it is going to perform "gam* OR play*".
- Same section as above: the Finnish equivalent should be explicitly written in the section.
- Same section as above: It is not clear how the university libraries are going to be queried. If I visit the website of the Tampere university library and perform the query "gam* OR play*" I obtain more than 27 million results. Different universities library websites might have different interfaces and would allow different types of filtering. I was not able myself to filter for results that would return only the authors from that organisation. It would be great if the author could expand on the procedure on how to do this in practice and let others to reproduce and reuse the same approach. Ideally the author would be able to test the feasibility of this approach on all 35 HEI libraries and make sure they all allow to be queried as desired, or then simply remove this approach from the registered report as I recommended above. Finally, it is unclear if the search is performed on titles, author names, etc. The author could specify where in the paper the terms gam* and play* should appear.
- section 4.2 2. With research.fi I was able to conduct the query "gam* OR play*" and clearly obtain only research outputs affiliated with a Finnish HEI. However the syntax of research.fi did not allow to use OR. Also it seems that only search on Titles and authors are possible. The author could provide greater detail on how the search should be carried in these outlets, however it is also fine if these are removed and the source of articles will only be Scopus, Web of Science, and EBSCOhost.
- section 4.2 3. I tried to perform the same query on the outlet "Lähikuva" and obtained more than 20 thousand records. It is unclear how I would be able to filter for certain formats (books, papers, etc) or for authors affiliated with a Finnish HEI. The author could expand how this is going to happen with these outlets. In my understanding (I am not Finnish) this is not a peer reviewed journal so it could be excluded (see my comment above to limit the search to peer review articles only).
- section 4.2 4. Scopus and ScienceDirect are both owned by Elsevier, with ScienceDirect most likely forming a subset fully contained in Scopus. I would recommend to only use Scopus and leave out ScienceDirect. I was able to run the query "gam* OR play*" on

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scopus limited for only papers associated with Finnish HEI (27087 results with time filter 2003 - 2023).

- Same section as above: I was not able to filter per affiliation with EBSCOhost. The author should provide details on how to do that on EBSCOhost and how the query would look like.

- Same section as above: I did not have time to test Web of Science and Wiley, the author should clearly specify also with these databases how the query will be run and what types of filters are possible. I believe Wiley is similar to ScienceDirect, i.e. other larger databases (like Scopus) should have all Wiley peer reviewed articles.

- section 4.2 5: metadata extraction should happen AFTER the dataset has been pruned from duplications. Some of the aforementioned databases might not contain all the metadata that the author wants to explore or might be possible that they do not allow for automatic download of such metadata. Furthermore, if the same paper is available in more databases, it could be too much effort to extract the same metadata from different databases automatically.

- Same section as above: it is not clear what the author means with "through inference if all else fails". If a paper is missing the list of keywords there is simply no way to infer keywords. The author should instead outline a strategy for missing values for each of the categories mentioned (publication year, authors' names, affiliations, keywords, publishing venue, publishing venue type, discipline of publishing venue): for example the author could decide to exclude all papers that do not have any keyword attached.

Minor:

- This is a somewhat stylistic consideration and I leave to the editor and the author the final decision: Since this is a stage 1 registered report that will be published, I would try to use the passive tense e.g. "I am especially interested in mapping the Finnish game research field due to how it has significantly developed in recent years as outlined" -> "Mapping the Finnish game research is important due to how it has significantly developed in recent years as outlined".

- Continuing from the previous comment, I would refrain from including statements like 'I consider myself knowledgeable enough...' as they cannot be substantiated and may undermine the objectivity of the paper. Instead, it's more effective to focus on presenting evidence and supporting arguments that demonstrate expertise of the author without relying on personal assertions.

- Page 3: Similarly, to strengthen objectivity, I would refrain from using 'based on my intuition' as it suggests a reliance on personal judgement and innate instinct rather than a reasoning process. It would be more effective to articulate the reasoning based on observed patterns or data that support the conclusions drawn

- Often the first person is used, but sometimes the third person is also used (with "the researcher"). It would be good to be consistent and use only one. If sentences can be turned into passive mode, the author does not need to mention themselves. For example "The researcher will remove any duplicate publications and carefully examine each article to

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determine if it meets the selection criteria" becomes "Any duplicate publications will be removed and each article will be carefully examined to determine if it meets the selection criteria"

Enrico Glerean, Aalto University.