Canons of Games Research: An Analysis of the Most Cited Publications

Veli-Matti Karhulahti
University of Jyväskylä
University of Turku
vmmkar@utu.fi

Raine Koskimaa
University of Jyväskylä
raine.koskimaa@jyu.fi

Keywords
Game Studies Analysis, Meta, Reflection

EXTENDED ABSTRACT

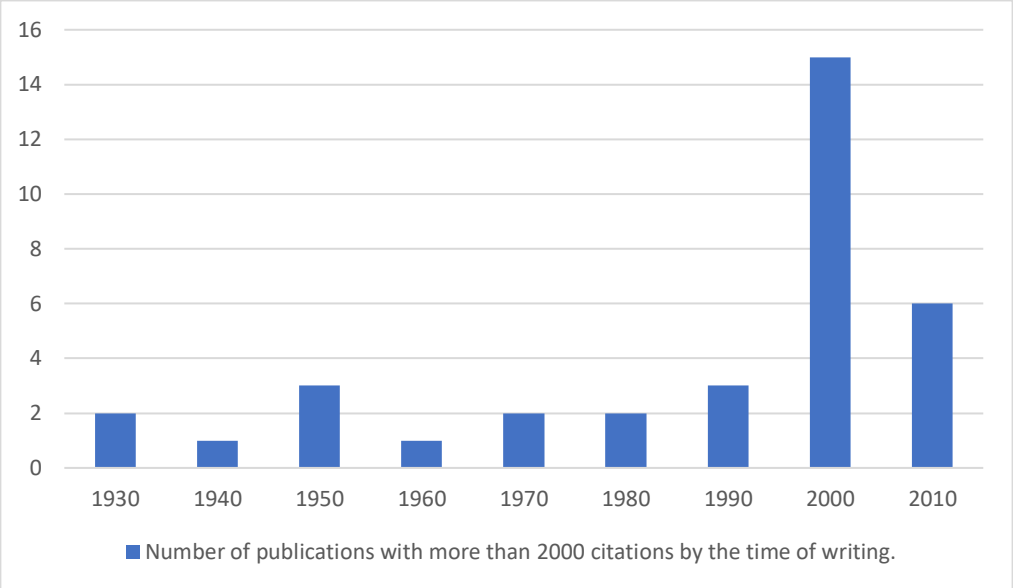
The first scientific monographs dedicated to play and games are already older than the century (e.g. Groos 1898). Meanwhile, ludology (as an academic discipline or field) has been around for decades (e.g. Maigaard 1950) and computer games have been studied increasingly in universities since the 1980s (e.g. Malone 1980). Today, thousands of studies have been published via numerous channels with great variation in readership and citation. This study provides an analysis of the latter; namely, an investigation of the most cited studies within the field and their implications.

The disciplinary dynamics of play and games research have recently gathered significant attention (Mäyrä & Sotamaa 2017). The most notable of those, for our present purposes, comes from Paul Martin (2018) whose ambitious article involved a mapping of the 300 most-cited play and games research authors. Among his other findings, Martin distinguished the 30 most-cited authors of the sample, which fell into five disciplinary communities (from the largest to the smallest): communications, education, humanities & social sciences, computer science, and health. In order to (in)validate and expand on Martin's work, the present study takes a close(r) look at the particular publications that have been cited most within the field. To be clear, the idea here is thus not to examine the authors or affiliations per se, but rather to explore the variety and specificity of the scientific outcomes that have ended up in the extreme "mainstream" of play and games research.

As a method, we exerted a wide systematic search in the databases Google Scholar, CiteSeer, and Microsoft Academic. By inserting the words "play," "playing," "playfulness," "player," "game," "gaming," "gamic," "gamer," "ludo," "ludic," "ludus," "videogame," "digital game," "computer game," "console game," and "mobile game" into the search engine (first respectively and then combining them until a point of saturation), we compiled a list of the most cited publications itemized in the database in question. We excluded all studies from the mathematical academic sector(s) of game theory due to their overarching presence and scarcity of relevance for the present conference. All other studies were included. Being fully aware of its drawbacks and limited scope, our conceptualization of the "field" at hand is based on the algorithmic relationship between the noted search words and their counterparts in the search engines.

Proceedings of DiGRA 2019

For purposes of this study, we drew the line of recorded citations at 2000, i.e. we selected all studies that were cited 2000 or more times and compiled them into a list. This list included 35 publications (Appendix 1). As to general statistics, 16 out of the 35 publications were articles and the remaining 19 were monographs. Ten publications had a woman author. The publication years of the 35 contributions are as follows:



Evidently, the above method is truly limited by both the search engine and keyword choice; however, at the same time, those limitations form the basis of our three key findings.

First, a number of influential publications familiar to the present conference goers could not be found via the search and, thus, were left unlisted. For instance, the three monographs that had a high impact on the emerging "game studies" in the early 2000s—*Computers as Theatre* (Laurel 1991, 3791 citations), *Cybertext* (Aarseth 1997, 4402 citations), and *Hamlet on the Holodeck* (Murray 1997, 5290 citations)—were left out since none of the play and game related search words yielded those books. Interestingly, the three other books from the 1990s that found their way to the list (Boal 1992; Sutton-Smith 1997; Fudenberg & Levine 1998) deal with play and games mainly outside the digital, which implies that early *videogame* (*computer game*, *digital game*) research chose to identify or position itself with terminology that does not connect them (algorithmically and linguistically) to the present context. This has potential consequences especially for the emerging students in the field.

Second, the list reflects somewhat accurately the emergence of "game studies" as well as play and games research in general. While 1-3 canonical contributions have been published each decade from the 1930s to the 1990s, in the 2000s the number jumps to 15 and even the 2010s have six instances of more than 2000 citations already. In contrast to Martin's (2018) finding that "many of the most cited authors in game research are not writing about games," our canonical core (publications in the 2000s and 2010s) is very much game and play oriented per se, and thus strengthens the notion of institutional formation. While this can be partially explained by our exclusion of mathematical game theory from the list (and the contrast between our keywords and Martin's more wide-spread exploration), it is clear that the words "play" and "games" (and their related terminology) have now come to be used and

cited in the scientific communities with reference to the culturally distinguishable gaming phenomenon (see Kirkpatrick 2015) rather than metaphorically (see Karhulahti 2015).

Third, a closer look at the recent listings—from the 2000s (15) and 2010s (6)—contra the ones before—from the 1930s to 1990s (14)—indicates some notable thematic changes. In both eras the cultural and sociological publications represent approximately the half of canonized works (seven before 2000 and eight afterwards) and psychological (four publications before 2000 and three afterwards) as well as computer science (two publications both before and after 2000) remain relevant, in the second millennium the areas of education/learning (four publications) and gamification (four publications) emerge without listed predecessors (with the exception of Fudenberg & Levine 1998 that was published two years before our cut), whereas 'health' from Martin's fields is missing from the top-citation listing altogether (or appears only in relation to mental development and aggression research). As such, the material reflects the rise of two new areas of play and games research and provides a basis for analyzing their position in relation to older trends in the field.

BIBLIOGRAPHY

Groos, K. (1898). *The Play of Animals: A Study of Animal Life and Instinct*. Trans. E. Baldwin. Originally published in German as *Die Spiele der Tiere* (Jena, 1896). Chapman and Hall.

Karhulahti, V. (2015) *Adventures of Ludom: A Videogame Geneontology*. University of Turku.

Kirkpatrick, G. (2015). *The formation of gaming culture: UK gaming magazines, 1981-1995*. Springer.

Maigaard, Per (1950): "About Ludology", Proceedings of the 14th *International Congress of*

Sociology. Aug 30 – Sep 3, 1951, Rome, Italy. 362-373.

Malone, T. W. (1980). What makes things fun to learn? A study of intrinsically motivating computer games. Doctoral Dissertation. Stanford University.

Martin, P. (2018). The Intellectual Structure of Game Research. *Game Studies*, *18*(1).

Mäyrä, F., & Sotamaa, O. (2017). Need for perspective: introducing the special issue "Reflecting and Evaluating Game Studies". *Games and Culture*, *12*(6), 495-498.

APPENDIX

1. Huizinga, 1938: *Homo Ludens* **17979**
2. Winnicott, 1971: *Playing and Reality* **16069**
3. Gee, 2003: *What Video Games Have to Teach Us about Learning and Literacy* **12469**
4. Piaget, 1945: *Play, Dreams and Imitation in Childhood* **10633**
5. Prensky, 2000: *Digital Game-based Learning* **6886**
6. Salen & Zimmerman, 2003: *Rules of Play: Game Design Fundamentals* **6792**
7. Turner, 1982: *From Ritual to Theatre: The Human Seriousness of Play* **5684**
8. Berne, 1964: *Games People Play: The Psychology of Human Relationships* **5344**
9. Caillois, 1958*: Man, Play, and Games* **4950**

10. Deterding et al., 2011: “From Game Design Elements to Gamefulness: Defining Gamification” **4444**
11. Silver et al., 2016: “Mastering the Game of Go with Deep Neural Networks and Tree Search” **4208**
12. Goldreich, Micali & Wigderson, 1987: “*How to Play ANY Mental Game”* **3907**
13. Fudenberg & Levine 1998: *The Theory of Learning in Games* **3855**
14. MacGonigal, 2011: *Reality Is Broken: Why Games Make Us Better and How They Can Change the World* **3628**
15. Sutton-Smith, 1997: *The Ambiguity of Play* **3176**
16. Garris et al., 2002: “Games, Motivation, and Learning: A Research and Practice Model” **3067**
17. Vygotsky, 1933: “Play and Its Role in the Mental Development of the Child” **3041**
18. Geertz, 1972: “Deep Play: Notes on the Balinese Cockfight” **2963**
19. Bogost, 2007: *Persuasive Games* **2801**
20. Juul, 2005: *Half-Real* **2699**
21. Anderson & Bushman, 2006: “Effects of Violent Video Games on Aggressive Behavior, Aggressive Cognition, Aggressive Affect, Physiological Arousal, and Prosocial Behavior: A Meta-analytic Review…” **2678**
22. Samuel, 1959: “Some Studies in Machine Learning Using the Game of Checkers” **2627**
23. Yee, 2006: “Motivations for Play in Online Games” **2554**
24. Kapp, 2012: *The Gamification of Learning and Instruction: Game-based Methods and Strategies for Training and Education* **2508**
25. Green & Bavelier, 2003: “Action Video Game Modifies Visual Selective Attention” **2495**
26. Von Ahn & Dabbish, 2004: “Labeling Images with a Computer Game” **2463**
27. Bateson, 1955: “A Theory of Play and Fantasy” **2321**
28. Boal, 1992: *Games for Actors and Non-actors* **2275**
29. Anderson & Dill 2000: “Video Games and Aggressive Thoughts, Feelings, and Behavior in the Laboratory and in Life” **2237**
30. Michael & Chen, 2005: *Serious Games: Games that Educate, Train, and Inform* **2217**
31. Zichermann & Cunningham, 2011: *Gamification by Design: Implementing Game Mechanics in Web and Mobile Apps* **2189**
32. Castranova, 2005: *Synthetic worlds: The Business and Culture of Online Games* **2108**
33. Sweetser & Wyeth, 2005: “Game Flow: A Model for Evaluating Player Enjoyment in Games” **2096**
34. Hamari et al., 2014: “Does Gamification Work? A Literature Review of Empirical Studies on Gamification” **2073**
35. Hsu & Lu, 2004: “Why Do People Play On-line Games? An Extended TAM with Social Influences and Flow Experience” **2053**