Diode Games: Rediscovering the Bridge between Analog and Video Gaming through the Elektor Magazine

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INTRODUCTION

This proposal defines and analyses a sub-category of electronic games, which we call "diode[1] games," in order to highlight their role in the genealogy of gaming practices.[2] Our research combines a quantitative and distant approach using keyword counting and topic modeling with close reading analysis of a limited corpus of selected articles from the French-speaking edition of Elektor magazine (1978-1983). We extracted a corpus of 17 electronic games, analysed it, and compared it to the so-called "TV games" published by the same magazine. We argue that "diode games," by focusing on the visual feedback given to players by light-emitting diodes (see Figure 1), invite a re-evaluation of common categories of gaming culture.

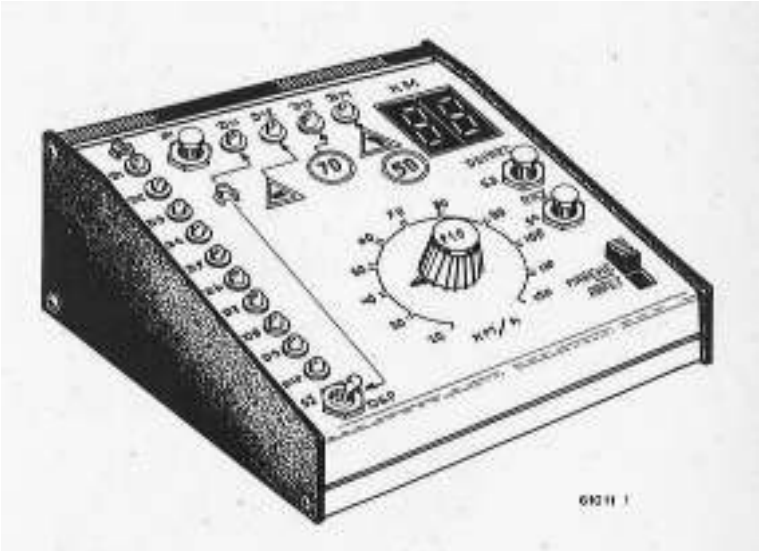

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Figure 1: Article illustration showcasing a possible box design for a diode game, *Simulateur de route* [*Road simulator*], Elektor, n° 34, April 1981, p. 25 (French-speaking edition).

In the course of our ethnographic investigations with video game creators active in the 1980s in France, Belgium, and Switzerland,[3] we gathered testimonies that regarded electronic hobbies as a foundation for video game development. For instance, Sophie Bémelmans (2024) analysed Daniel Roux's journey, a still active Swiss game developer who started out with a diode game in 1977, *Testez vos reflexes [Test your reflexes]*, on the Dauphin, a Swiss microcomputer kit that he discovered in an electronic magazine (Bémelmans and Hurel, 2025). These testimonies highlight the relationship between electronic hobbies such as model making and amateur radio and microcomputing. In particular, they allow us to grasp the way in which microprocessors were discovered and adopted as part of these pre-existing practices (Bémelmans 2024). They describe how microprocessors, first discovered through magazines and clubs, were gradually integrated into their existing electronic practices. In their search for usefulness (Swalwell 2021), they eventually mastered microprocessors, enabling them to develop microcomputers and, by extension, video games.

While recent regional histories of video games (Wade 2016, Švelch 2018, Blanchet and Montagnon 2020, Swalwell 2021) attest to the proximity of these electronic hobbies with the emergence of microcomputing, this connection seems to remain underexplored and poorly documented. Furthermore, studies focusing on specialized video game press (e.g. Kirkpatrick 2015, Krywicki 2022) have not addressed the abundant publications dedicated to electronic hobbies, which are most often considered marginal in relation to their primary objectives.

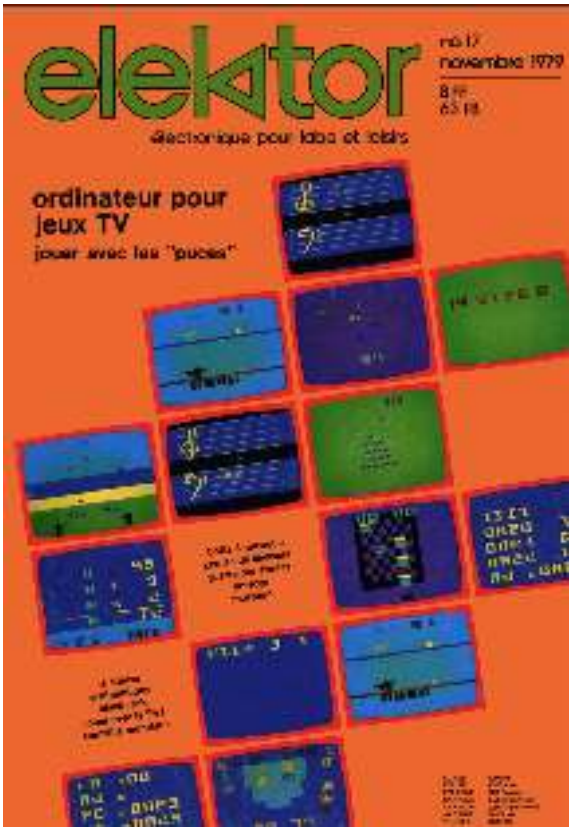

Figure 2: Front cover of Elektor magazine (French-speaking version) from November 1979. This edition is titled "*ordinateur pour jeux TV. jouer avec les "puces"* ["computer for TV games. playing with the "chips""].

Do electronic hobbies represent a historically and culturally underestimated root of video games in Francophone Europe? What are the observable relationships of filiation or rupture between these cultural practices? To address these research questions, this contribution focuses on the French-speaking edition of the Elektor magazine—frequently cited in our interviews (see Figure 2). The magazine was first published in the Netherlands in 1961 under the name Elektor. It was later published in English and German, and then in French starting in 1978.

DISTANT READING: MAPPING ELEKTOR AND THE PRESENCE OF GAMES

The keyword counting approach (Zagal et al. 2012) enables the identification of game-related words within our corpus, revealing potential latent game topics in the magazine and providing an initial overview of the corpus' contents (see Figure 3).

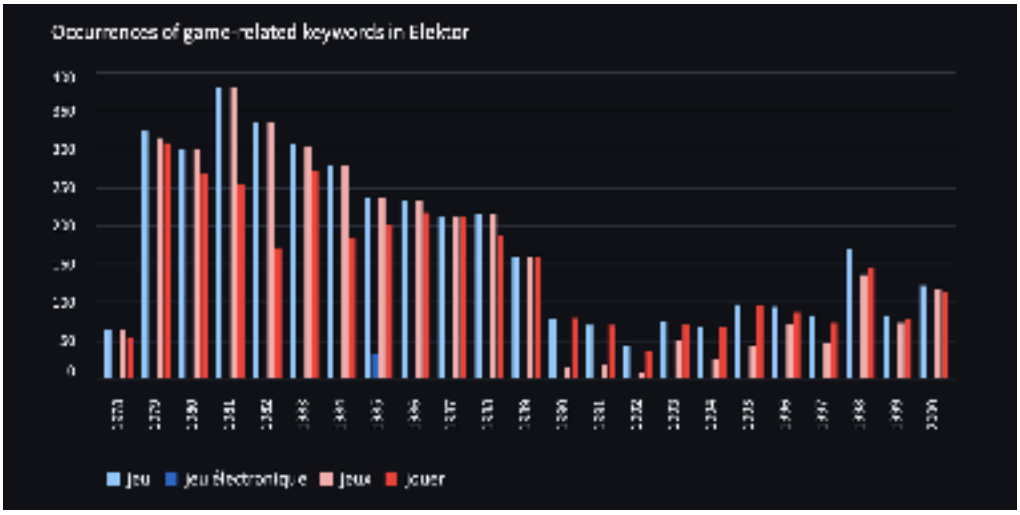

Figure 3: A bar chart representing the occurrences of game-related keywords in *Elektor* from 1978 to 2000.

The BERTopic modeling approach (Grootendorst 2022) allows us to identify the magazine's main themes and track their evolution over time. The analysis reveals significant topics throughout the magazine, including electronic components, construction projects, and retail and distribution elements. While the proportion of gaming-related content is relatively small, it is consistently recognized by the model across one or more topics. Moreover, the analysis suggests a proximity between the themes of gaming and the themes of robotics and electronic rail transport modelling amongst others (see Figure 4).

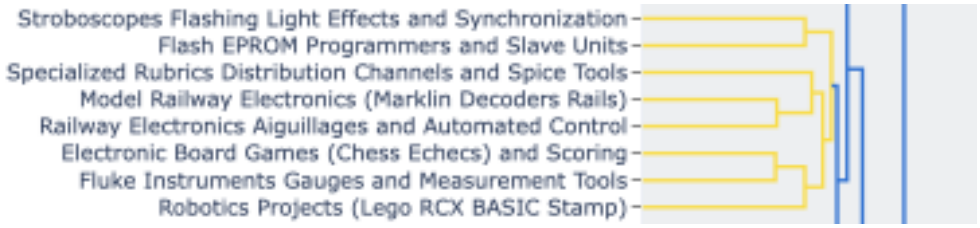

Figure 4: Hierarchical clustering of identified gaming topics. This figure is an extract from a larger tree-like graph. The more topics are connected on the left of the graph, the more closely related they are according to this approach.

Additionally, the topics related to games have undergone a diachronic analysis, revealing that game-related themes appear to be more prevalent in the magazine's early publications (see Figure 5).

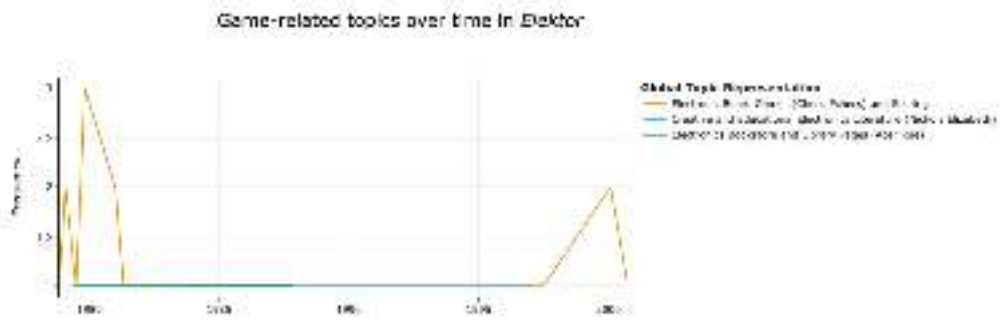

Figure 5: Frequency of game-related topics over time.

CLOSE READING: UNCOVERING FILIATIONS IN GAMING CULTURE

Through a close reading of articles dedicated to games, we have developed a typology of play-related practices and objects:

1. **Playful electronic tinkering:** These practices are presented in the magazine as having no specific aim beyond pure "fun" (for example, mimicking the sound of a galloping horse).
2. **Electronic tools for games**: Devices like clocks designed for playing analog chess.
3. **Electronic games**: Interactive setups, such as simulations of marble or hunting games, including "diode games" due to visual feedback mechanisms.
4. **TV games or video games**: Elektor published its own TV Games Computer (ETVGC) in 1979, followed by guides encouraging readers to create their own games.

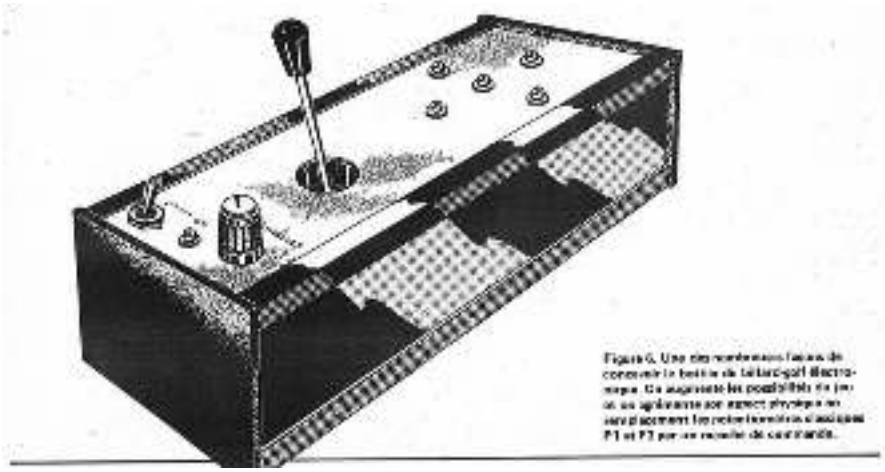

Figure 6: Article illustration showcasing a possible box design for *Golf de poche* [*Pocket Golf*], Elektor, n° 20, february 1980, p. 2-28 (French-speaking edition).

The analysis of articles describing the creation of electronic games equipped with light-emitting diodes, as well as the analysis of "TV games," allowed us to uncover two connections. Firstly, diode games are often electronic adaptations of analog games such as golf (see Figure 6), bowling or Russian roulette. In related articles, authors

emphasize what electronics add to the initial experience, such as being able to play alone or having visual feedback.

Secondly, Elektor's TV games share several characteristics with their diode-based games. For instance, some games feature non-playable sprites scrolling horizontally, such as *Horse Race* (1984). And in A*ttack from Space* (1982), the player's action is limited to a fixed, immobile position. Those two mechanics resemble the diode game *Chasse au lièvre* [*Hare Hunt*] (Elektor, 1978), in which a series of ten diodes light up in sequence to simulate the hare's movement. The player must press the potentiometer precisely when the sixth diode lights up to "turn it off," thereby "killing the hare."

Beyond ETVGC, the game *Jagen* [*Hunt*] (Hocosoft, year unknown), developed for the Interton VC 4000 and using the same microprocessor, also features both a stationary avatar that launches a projectile vertically and animals moving from left to right across the screen (see Figure 7). It is therefore necessary to consider the circulation of these imaginaries beyond the platforms directly linked to Elektor.

Figure 7: Screenshot of *Jagen* [*Hunt*].

CONCLUSION: REASSESSING THE FORGOTTEN ROOTS OF VIDEO GAMES IN ELECTRONIC HOBBY CULTURE

In conclusion, this proposal encourages further exploration of the connections between electronic hobby culture and video games. Quantitatively, while our experiments provided a low-cost overview of the *Elektor* magazine, it would be valuable to apply this approach to the broader landscape of electronics magazines in French and other languages. This would help assess how electronics contributed to paving the way for the development of video games on a larger scale. Qualitatively, we introduce the subcategory of "diode games," which opens new perspectives for research. Our findings highlight the necessity of detailed comparative analyses of early "TV games" to trace the circulation of gaming mechanics and position "diode games" as a significant yet overlooked part of gaming culture.

REFERENCES

Bémelmans, S. 2024. “Grounding the history of Swiss video games : The case of Daniel Roux, game developer since the 70s.” *History of Games 2024*, Birmingham University.

Bémelmans, S., and Hurel, P.-Y. 2025. “From Leisure Electronics to Game Creation: Daniel Roux’s Role in Swiss Game History.” *ROMchip*. 7 (1).

Blanchet, A. and Montagnon, G. 2020. *Une histoire du jeu vidéo en France: 1960-1991 : des labos aux chambres d’ados*. Houdan: Les Éditions Pix’n Love.

Elektor. 1978. Chasse au lièvre.

Elektor. 1980. *Golf de poche*.

Elektor. 1981. *Simulateur de route*.

Grootendorst, M. 2022. “BERTopic: Neural topic modeling with a class-based TF-IDF procedure.” arXiv. https://doi.org/10.48550/arXiv.2203.05794.

Hocosoft. Year unknown. *Jagen*. Elektor TV Games. Hocosoft.

Kirkpatrick, G. 2015. *The Formation of Gaming Culture: UK Gaming Magazines, 1981-1995*. Palgrave Pivot. Basingstoke: Palgrave Macmillan.

Krywicki, B. 2022. *En quête d’enquête - Généalogie et analyse des techniques d’investigation pratiquées par les journalistes spécialisés en jeu vidéo*. PhD, Université de Liège. https://orbi.uliege.be/handle/2268/288409.

PlayGames. 2023. *Elektor TV Games Computer - Hunt*. Video. YouTube, 21 August. https://www.youtube.com/watch?v=dQ-3TK508j0

Roux, D. 1977. *Testez vos réflexes*. Dauphin. Switzerland.

Swalwell, M. 2021. *Homebrew gaming and the beginnings of vernacular digitality*. Cambridge, MA: MIT Press.

Wade, A. 2016. *Playback – A Genealogy of 1980s British Videogames*. Bloomsbury Academic. https://www.bloomsbury.com/uk/playback-a-genealogy-of-1980s-british-videogames-9781628924862/.

Zagal, J., Tomuro, N., and Shepitsen, A. 2012. “Natural Language Processing in Game Studies Research: An Overview.” *Simulation & Gaming* 43 (3): 356-373. https://doi.org/10.1177/1046878111422560.

[1] In this paper, we understand diodes not strictly in the electronic sense, but specifically as light-emitting diodes (LEDs), which are visual output devices that enable the creation of a luminous interactive experience, much like a screen does for a video game.

[2] This paper is based upon work supported by the Swiss National Science Foundation under grant No. 209248.

[3] This ethnographic material is based on interviews conducted by Sophie Bémelmans and Pierre-Yves Hurel. The latter interviewed Belgian and Swiss users of the DAI Personal Computer (more information: https://dai.hypotheses.org/), as well as Swiss video game creators. The genealogy between practices associated with electronic hobbyism and the emergence of microcomputing is a central topic in Sophie Bémelmans' ongoing PhD dissertation on Smaky computers.