

Playing About, Through and with Language. Two Educational Games to Explore Endangered Languages and Language Change: *Phonetics Pursuit* and *Ludolecte*

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Abstract: There has been some research on language skills from the point of view of games-based learning (GBL) (Hung et al. 2018; Xu et al. 2020). However, there are very few studies in GBL on linguistics, and very few educational games that focus on the language sciences. In this paper, we argue that this is a missed opportunity. There are many linguistic topics that would benefit from the GBL approach: Where do individual accents come from? What are the different ways in which words change meanings? What happens to the language system when it comes into contact with other languages or becomes endangered? In the first part of this paper, we present a survey of linguistics-oriented games on BoardGameGeek (BGG). We then propose a framework for analysing the semiotic relationship between games and language, based on systemic functional linguistics (Martin & Rose 2008). In the final part of this paper, we present two game designs that harness the different dimensions of this framework to teach different linguistic concepts: (i) *Phonetics Pursuit*, a quiz game on endangered Sino-Tibetan languages with a focus on phonetics, linguistic typology, and geography, and (ii) *Ludolecte*, a card-based role-playing game in which an isolated community creates neologisms and imagines different semantic trajectories for them. These games have yet to be play-tested, so we cannot present any evaluation data. Instead, this is a design rationale paper which discusses how technical concepts in linguistics can be translated into coherent game mechanics while remaining faithful to the epistemological requirements of game-based learning (Reinhardt & Thorne 2020; Sorrentino 2025).

Keywords: Games about language, Games about linguistics, Language change, Neology, Phonetics, Semogenesis, Systemic functional linguistics

1. Introduction

In this paper, we are interested in using game-based learning (GBL) to explore and teach technical concepts in linguistics. Although GBL has been applied to a range of different domains, few commercial or educational games deal with language as an explicit topic, and there are virtually no games that focus on the language sciences.

In the first part of this paper, we present a survey of the different ways games relate to language. Most often, they do this by mobilising players' language skills; on occasion, they simulate the actual systems of language directly. Examples can be seen in commercial games (spelling in *Scrabble*, semantic inferences in *Taboo*), as well as educational games (pronunciation in *Kosmopolit*, phonetics in *Pharaoh's Phonics*, and so on).

Then, we present a framework for theorising how games relate to language. Basing our observations on systemic functional linguistics (Martin & Rose 2008), we posit three types of relation: (1) experiential (the extent to which language as a theme is constructed explicitly or by more symbolic means), (2) interpersonal (the extent to which the game uses players' language skills or encourages them to create innovative forms of language), and (3) textual (whether language is incidental to the mechanics of the game or is instrumentalised as part of the game mechanics).

In the final part of this contribution, we present two tabletop game designs that explore various aspects of this framework. These either represent the metalanguage of linguistics directly in game format (*Phonetics Pursuit*) or create a generic model of lexical innovation that can be adapted to different thematic scenarios (*Ludolecte*).

It should be noted that neither of our game designs has been play-tested, so no data on player feedback exist. The present work focuses solely on the potential of transforming abstract linguistic concepts into functional game systems.

2. Skills for Language Learning and for Studying Linguistics

Learners of foreign languages and students of linguistics do not have the same learning objectives. However, it could be argued that both share a certain number of underlying language skills. For example, it is useful for both language learners and students of linguistics to acquire skills such as metalinguistic awareness (the ability to reflect on the speech habits of one's own or another's language community), interlanguage understanding (overcoming one's first-language instincts when interpreting new language data), and theory of mind (the ability to imagine and adopt different linguistic worldviews) (Loewen & Reinders 2011).

Since some core skills are involved, the principles of GBL should also be applicable to both language learning and linguistics. According to Anderson (2014), games-based learning provides several affordances for language learning. Most notably, these include the ability to engage in risk-free exploration, iterative practice, authentic communication, and immersive narrative. These activities may also be relevant to linguistic analysis, at least as far as transferable skills are concerned (such as practical analysis).

The experimental findings of GBL regarding language learning may also be relevant to linguistics. Several studies have shown that games can be effective vehicles for language learning (Hung et al. 2018; Xu et al. 2020; Reinhardt & Thorne 2020). In particular, Sorrentino (2025) has argued that commercial videogames such as *Heaven's Vault* (2019) and *Chants of Senaar* (2023), which involve the decoding of a fictional language, enable players not only to notice and remember new language features but also to generate new language use:

[...] generative processing occurs when previously learned words are met or used in ways that are different from previous encounters. (Sorrentino 2025: 812)

As we see below, the concept of generative processing provides us with a key criterion for distinguishing between two broad types of language-oriented designs: (1) games that make use of participants' existing language ability, and (2) games that involve participants in the creation of novel linguistic forms.

3. A Functional Approach to how Games Relate to Language

Games can relate to language in many different ways. To better understand this relationship, we refer to a model of language known as systemic functional linguistics (SFL) (Martin & Rose 2008; Ensslin 2012). SFL posits three 'metafunctions' or dimensions that can be used to map the relations between language (seen as the semiotic system by which social interactions are performed) and gameplay (seen as a goal-oriented cultural genre).

1. The experiential function involves the ways in which themes are constructed or represented in discourse. This can be direct and concrete ('congruent') or indirect and abstract ('metaphorical'). For example, a quiz game such as *League of the Lexicon* (Stavros Damos & Steven Noble, 2022) is congruent. It refers directly to the players' own knowledge of language and linguistic geography. In contrast, the Euro-style worker-placement game *De vulgari eloquentia* (Mario Papini, 2010) is metaphorical. It only represents the emergence of the Italian language in the early Renaissance as an abstract theme, without any reference to language in terms of game mechanics.
2. The interpersonal function can involve several aspects, such as whether player roles are symmetrical or asymmetrical or whether the game encourages cooperative or competitive play. What is of concern to us here is the extent to which players' language skills are 'integrative' (the game makes use of linguistic forms or meanings that are already part of the players' existing language skills) or 'instantial' (the game requires players to create novel configurations of sounds, words, or even narrative structure).

As we see in the following sections, many language-oriented games such as quiz games, social deduction games, and role-playing games (RPGs) rely on the existing language competence of players. Thus, the classic game *Scrabble* (Alfred Mosher Butts, 1948) depends on players' knowledge of spelling. In contrast, the party game *DaDaDa* (Gustavo Ceci Guimarães et al., 2024) asks players to assign different images (concepts) to a limited number of contrasting sounds (syllables), thus forcing the participants to create a novel lexical system.

3. The textual function generally refers to the physical channel or mode of production by which interactions are conducted (signs, sounds, gestures). Here we are interested in whether the role of language is 'incidental' (the game mechanics rely on non-linguistic competencies, with language playing an accompanying role) or 'instrumental' (the game mechanics make explicit use of players' existing skills). In physical sports and abstract games such as Chess, language is incidental. Players only need to communicate with each other to operate the game. In contrast, in a game such as *Kosmopolit*

(Julien Prothière & Florent Toscano, 2020), language is 'instrumental'. In this game, which is set in a multicultural restaurant, the players (as waiters) have to pronounce the different names of meals in their customers' languages.

4. A Survey of Language-oriented Boardgames

4.1 Boardgames That are 'about Language' or are Played 'Through Language'

In this section, we use the typology presented above to give an overview of various tabletop games. These refer to language or linguistics directly (the experiential function) or require language use as part of gameplay (the textual function). For the moment, we leave to one side the small number of games that encourage players to create new language forms (an 'instantial' use of the interpersonal function).

BoardGameGeek (BGG) is a well-known commercial website that serves the gaming community as a reference archive for many commercial and educational tabletop boardgames. We consulted BGG manually, using the website as a freely searchable online platform (not as a database or corpus). At the time of writing, BGG lists over 166,400 tabletop games (consulted 14 April 2026). We used the basic search function in the database for game titles containing the word 'language' as well as general terms relating to linguistics ('grammar', 'lexis', 'semantics', etc.). Of the 42 hits obtained, most involve quizzes (tagged as 'Trivia' on BGG) or games designed to teach specific languages (tagged as 'Educational' on BGG). Some examples include:

- *Lakota Language Game*: a game promoting the Lakota language
- *Question Quest*: a quiz game designed to assist English language learners
- *See It and Sign It*: focuses on teaching American Sign Language

Of course, there are many games that deal with linguistic themes but do not mention language as part of their name. For example, *Crack Story* involves both spelling and syntax, yet this is not apparent from the title. To get around this, we looked at the 'categories' subsection of the BGG website. Of the 85 different categories currently listed, only two relate to language ('Negotiation' with 4,400+ entries, and 'Word Game' with over 4,700+ entries). The other 83 categories refer to physical skills ('Action / Dexterity'), cognitive skills ('Deduction', 'Maths', 'Memory', 'Number', 'Puzzle'), market segments ('Children's game', 'Adult game'), historical themes ('American Civil War', etc.), and fictional themes ('Adventure', 'Zombies'). Thus, as far as user-defined categories are concerned, games relating to language are rare compared with these seemingly more concrete themes.

Another way of looking for games on BGG is to search under 'families', a parameter that includes many hundreds of specific themes (names of cities, comic strips, TV series, types of game components, and so on). Despite the many hundreds of available labels, only one refers to linguistics ('Language / Linguistics'), and this has only been assigned to 15 games. Of these, we identify two broad types: (1) quiz games that refer to linguistic knowledge explicitly, such as *Etymology: The Card Game*, *Quizmo Phonetics*, *Smarticulation*, and (2) party games, which test players' performative language skills.

Although marginal, this category covers a range of linguistic topics, including morphology (*Frankenwords*: 'Stitch two words together to create new meanings'), semantics (*Concept*: 'Select icons to help your team guess a secret word or phrase'), and rhetoric (*Spiel!*: 'The game of spontaneous speechifying'). This final example belongs to an important category of games that make use of storytelling, negotiation, and debating skills. In effect, political games (*Diplomacy*, *Westphalia*) and social deduction games (*Secret Hitler*, *Werewolves*) not only make use of players' language skills but also build phases of conversation and negotiation into the game mechanics. We classify these games as both 'integrative' (since they use players' native communication skills) and 'instrumental' (since their mechanics require players to perform linguistically: conducting interrogations, giving speeches, making deals, and so on).

Another interesting family of language-oriented games is 'Fictional Languages'. On BGG, this label has been assigned to 15 games. These can be divided into (1) games that refer to non-existent alien or ancient languages, as in *A Message From the Stars* ('Work together to decode messages from an alien race'), and (2) games that involve the decoding of a fictional but nevertheless constructed language (*Rosetta: The Lost Language*: 'A game centered on decoding an unknown language'; *City of the Six Moons*: 'A game from an alien civilization: once you decipher the rules, what will you find?'). This latter category (language-deciphering) is dependent on players' cognitive skills and the manipulation of actual linguistic signs (especially with a view to 'translating' these signs into the players' native languages).

Using the systemic criteria we introduced above (Section 3), all of the games we mentioned can be classified as 'congruent', 'integrative', and 'instrumental' (i.e., making explicit reference to language as a theme, using players' existing language competence, and making language skills part of the game mechanics). Although linguistic topics are not absent from the BGG database, it is clear that themes dealing explicitly with language or linguistics (whether congruently or metaphorically) are thin on the ground. On the other hand, there are a large number of games that mobilise language instrumentally. These involve basic skills such as orthography and pronunciation (typically listed as 'Word games' on BGG) or more advanced skills in communication and rhetoric (often labelled 'Negotiation games').

4.2 Boardgames That Play 'With Language'

We suggested above that a small number of games make use of language 'instantially'. That is, they enable players to effect a change in the state of the language, for example by creating new instances of meaningful vocabulary. While the goal of 'effecting a change in the language' may sound ambitious, this is effectively the aim of language teaching. Successful students of language acquire new language forms, building up their competence progressively in a new language system, sometimes termed the 'interlanguage' (Loewen & Reinders 2011). As mentioned above, this goal is related to generative processing, that is to say, the creation of new language forms in a meaningful context (Sorrentino 2025).

Language change is often equated with the creation of wholly new word forms (i.e., neologisms, Algeo & Algeo 1991) or wholesale language reform (as in the invention of complete phonetic inventories or grammatical paradigms, Peterson 2015). However, Halliday (1992) observed that most language development involves more subtle changes in semantics and grammar, which he termed 'meaning potential'. Changes in meaning potential involve, for example, shifting the probability of using a particular preposition in one context as opposed to another. This kind of language change depends on two related processes: instantiation and semogenesis. 'Instantiation' corresponds to the forging of new language forms (or new uses of existing forms) in meaningful ongoing discourse. Conversely, 'semogenesis' involves language change in the opposite direction: the integration of these innovations into the language system as a whole. According to Halliday, it is this system (the interplay of instancial language use and semogenesis) that provides language users with a basis for interpreting meaning within ongoing discourse.

As mentioned above, only a small number of games in the BGG database deal with language as their main theme. Only a tiny subset of these simulate instantiation (a potential - or temporary - change in the state of the language). The following list includes a selection of these:

Gibberers (Keisei, 2024). Players use images to create signs (word/meaning pairings). The 'Mentor' communicates the pronunciation and meaning of their sign to the 'Students' using non-verbal communication. Students can gain hints to help them guess meanings (telepathy, etc.). The meanings of signs can change over a series of different phases, thus simulating a (limited) form of semogenesis.

Nomic (Peter Suber, 1982). Each turn, players propose a change in the rules and then roll a die to determine the number of points to add to their score. The other players vote on the rule change. Much of the gameplay involves in-game debate and the redefinition of key rules and terminology. This corresponds to (simulated) instancial changes in lexical semantics and terminology (term-formation and definition).

Xenolanguage (Kathryn Hymes, Hakan Seyalioğlu, 2024). Players work together to invent an alien language, exploring syntax, semantics, and cultural context.

The authors of *Xenolanguage* have also produced two role-playing games (RPGs) that can also be seen as modelling a form of semogenesis:

Dialect (Kathryn Hymes, Hakan Seyalioğlu, 2017). Players collaboratively create words and phrases while also navigating cultural and historical events that shape their language over three time periods. Significantly, the game requires players to use their neologisms in actual conversation. This approach enables these items to take on a life of their own in actual discourse.

Sign: A Game About Being Understood (Kathryn Hymes, Hakan Seyalioglu, 2015). The mechanics require players to create new signs for emerging concepts, modelling the creative and adaptive nature of sign languages. The game was inspired by the spontaneous creation of a sign language by deaf children in Nicaragua (Kegl 1994).

The majority of these games concentrate on lexical signs (*Gibberers*, *Xenolanguage*). Others, especially *Nomic* and *Dialect*, operate at the level of semantics and discourse. The common denominator among these games is

that the players are not decoding a known (or invented) language but are rather creating a new one. In addition, each of these games models a form of language change (often through a renegotiation of word meanings).

So far, we have examined the role of language in a sample of commercial games. We now turn to two proposals for educational language games that we are currently developing. These leverage all three dimensions identified above: (1) games that make reference to language directly (congruent use), (2) games that enable players to generate novel discourse or - potentially - new meaning potential (instantial use), and (3) games that make use of language as part of their core mechanics (instrumental use).

5. Phonetics Pursuit: A Quiz Game on Endangered Sino-Tibetan Languages

5.1 Introduction and Objectives

Phonetics Pursuit is a board game inspired by the mechanics of *Trivial Pursuit*. It is designed to introduce players to key concepts in linguistics through the lens of endangered Sino-Tibetan languages. While its primary focus is on phonetics, the game also incorporates elements of linguistic typology, geography, and sociolinguistics. It is intended for a broad audience, ranging from primary school students to university students and the general public.

By engaging players in an interactive and immersive experience, *Phonetics Pursuit* seeks to make complex linguistic concepts accessible while maintaining scientific accuracy. The game is being developed (in French) as part of the ANR PhoTon project, which aims to produce detailed phonetic descriptions of recently discovered contrasts in endangered Sino-Tibetan languages.

From a theoretical perspective, the game can be classified as both play 'about language' and 'through language', following the framework we set out above. In this type of game, linguistic knowledge is explicitly thematised. Similar to quiz-based games such as *League of the Lexicon*, *Phonetics Pursuit* establishes a 'congruent' relationship with language. Players engage with real-world linguistic knowledge, including phonetic systems, language families, and geographical distribution. This alignment ensures that gameplay remains closely connected to authentic disciplinary content while still being engaging.

5.2 Game Design and Mechanics

The core gameplay revolves around an immersive scenario: each team is assigned a 'linguistic passport' corresponding to a specific endangered language. However, key information on the passport has been lost. To reconstruct it, players must navigate a game board (Figure 1) and successfully complete challenges across different categories. Each correct answer allows them to recover a piece of information, such as the number of speakers, geographical location, or linguistic affiliation of the language. The game ends once the passport has been fully reconstructed.



Figure 1: Photo of *Phonetics Pursuit*

The game is structured around five main categories, each targeting a different modality of learning: geography ('Puzzle'), auditory perception ('Listen and Guess', using a talking pen such as 'Tellimero'), phonetic charts ('Consonants and Vowels'), linguistic misconceptions ('Fun Facts'), and language endangerment. The 'Fun Facts' category introduces players to the profession of linguist. It addresses common misconceptions and highlights

the diversity of linguistic work. The 'Consonants and Vowels' category encourages players to explore phonetic inventories. They learn to interpret consonant and vowel charts and compare them with their native language. Finally, the 'Endangered Languages' category raises awareness of language endangerment. It prompts players to reflect on when and why a language can become at risk.

5.3 Potential Impact and Contributions to Game-based Learning

By combining quizzes, auditory tasks, visual recognition, and problem-solving activities, *Phonetics Pursuit* offers a multimodal learning experience. It demonstrates how complex linguistic concepts can be rendered as coherent game mechanics. Ultimately, the game not only fosters knowledge acquisition but also invites players to step into the role of linguists. They discover both the diversity of the world's languages and the challenges involved in documenting and preserving them.

Table 1: Game Characteristics for Phonetics Pursuit on endangered Sino-Tibetan languages

Game Elements	Description
Scenario	In a fictional world where every language has its own passport, this information has been lost, and the player must recover it by correctly answering questions in each category.
Audience	Primary school students to university learners and the general public
Mode of Play	Quiz game
Participants	2-8 players, alone or as a team
Setup and Materials	Board game, dice, quiz cards, puzzles, talking pen, consonant and vowel charts, poster with tones
Mechanics	Knowledge-based gameplay combining quiz mechanics, auditory discrimination of phonetic contrasts, and the progressive reconstruction of linguistic profiles through multimodal tasks.
Timing	10-20 minutes

6. Ludolecte: A Card-based RPG to Explore Lexical Change and Encourage Spoken Language Skills

6.1 Introduction and Objectives

Ludolecte is a card-based educational role-playing game (RPG) that focuses on neology and lexical change. The game is specifically tailored for university students enrolled in language courses (English for specialists of other subjects, French as a foreign language) or the oral communication programmes of other specialist domains.

The theoretical framework of *Ludolecte* is rooted in sociolinguistics. It is particularly based on Halliday's (1976) concept of *antilanguage*, which examines how marginalised groups develop coded languages to define and reinforce their identities (*thieves' cant* used by criminal gangs in medieval Europe, *polari* among 19th-century gay men, and so on).

Ludolecte has three key teaching goals. First, it aims to encourage structured oral debates in language classrooms. It provides students with a framework to practise public speaking, negotiation, and argumentation in a foreign language. Second, the game introduces students to the principles of neology and lexical evolution. It allows them to experience how new words emerge and evolve within an imaginary community. Finally, *Ludolecte* serves as a tool for metareflexivity. It prompts students to reflect on their own discursive practices and the broader social forces that shape language.

6.2 Game Design and Mechanics

In many teaching contexts, language is presented as an abstract phenomenon to be described and analysed. Often, there are limited opportunities for students to engage with it as a dynamic and evolving practice. *Ludolecte* attempts to change this perspective by enabling students to enact actual processes of lexical creation and transformation. By offering a different entry point into linguistic concepts, the focus is placed on making visible a set of mechanisms (such as neology or semantic change) that are traditionally taught in a more detached way. By translating these into gameplay constraints, the design seeks to create conditions in which students can experiment with language, sometimes in unexpected ways.

The game is designed to fit within a one-hour session with limited rules explanations. It is deployable across multiple groups within a classroom. This implies a shift from narrative complexity (typical of RPGs such as *Dialect*)

to procedural clarity. Instead of emerging indirectly through play, linguistic mechanisms are foregrounded and directly operationalised.

The game architecture relies on three components. First, each session is framed by a scenario that provides a disciplinary context (for example, healthcare, geology, or law). These scenarios define a set of communicative needs and situate lexical creation within a specific domain of practice. Second, the core gameplay is driven by a set of cards corresponding to different processes of lexical innovation. These include abbreviation, borrowing, compounding, derivation, and ex-nihilo creation. These categories constitute a sort of 'neology engine': a structured set of transformation rules guiding lexical creation. Third, additional cards introduce variations in meaning. They prompt players to modify existing terms through mechanisms such as narrowing, broadening, or metaphorisation.

This three-part system, combining formal and semantic transformations, allows players to explore language as a dynamic and multi-layered system. In this sense, *Ludolecte* primarily operates as a form of 'play with language'. In this, linguistic structures are directly manipulated and transformed through gameplay.

An important aspect of the game design is the preservation of game state ('traces'). Rather than focusing on final outputs, the game encourages players to keep track of intermediate forms. This makes it possible to reconstruct the trajectory of each lexical item. This feature is relevant from a pedagogical perspective, as it supports post-game discussion and analysis. It also helps address a common limitation of game-based learning environments: learning processes may remain implicit if they are not made tangible and debatable.

The development of *Ludolecte* relies on a multidisciplinary team bringing together complementary areas of expertise. Game designers specialising in the development of educational and citizen-oriented games (*Ikigai - Games for Citizens*) are tasked with the design of the core mechanics and the overall player experience. Specialists in linguistics from different subfields are also involved to ensure the accuracy of linguistic content. In addition, a team of specialists from outside linguistics have been employed as 'scenario-writers' to design and test domain-specific scenarios. This enables the adaptation of the game to a variety of academic contexts. By embedding lexical creation within domain-specific scenarios, the game enables students to engage with the terminology of their own field.

One of the working hypotheses behind the project is that some aspects of linguistic understanding, particularly those related to change, variation, and use, may be more easily grasped when they are experienced rather than explained. We would like to point out that *Ludolecte* is still under development (in French) as part of *Idex Innovation Pédagogique 2025*. It is planned to report on the student evaluations of the game in future iterations of ECGBL.

Table 2: Game Characteristics for Ludolecte

Game Elements	Description
Scenario	Fictional settings (e.g., health crisis, secret society, isolated colony) requiring lexical innovation.
Audience	University students in language courses (English, FLE) or oral communication programs (LANSAD).
Mode of Play	Collaborative RPG where players co-create a lexicon and negotiate its evolution.
Participants	4-12 players, ideal for classroom groups.
Setup and Materials	Rulebook, scenario cards, and a custom card deck for tracking lexical changes.
Mechanics	Lexical creation, semantic negotiation, and cultural context linking words to scenario events.
Timing	60 minutes per session, adaptable to course length.

7. Conclusion

This paper argues that games can serve as laboratories for exploring linguistic concepts, provided their design aligns with the epistemological goals of GBL. Our functional framework - distinguishing games that play about, through, or with language - offers a tool for analysing existing games and designing new ones.

Phonetics Pursuit and *Ludolecte* exemplify how complex topics (phonetics, processes of neology) can be translated into engaging mechanics without sacrificing scientific rigour. These designs demonstrate complementary approaches: *Phonetics Pursuit* represents linguistic knowledge (congruent/thematic), making

phonetics accessible through quizzes and sensory tasks. *Ludolecte* simulates language change (instantial/instrumental), inviting players to create and negotiate meaning.

Both games leverage GBL affordances - risk-taking, iteration, immersion - to foster skills critical to linguistics: reflexivity, abstraction, and the ability to recognise and interpret other worldviews. Future work will involve the testing of these games in experimental conditions (including players who have participated in these games).

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