Article

Designing Joint Answers for Broken Cities. About Tenkuä, the Participatory Foresight and Planning Experience

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Abstract

This article is a longitudinal review of the results of Tenkuä, an experience in participatory futures and social imagination. It takes up learnings, achievements and areas of opportunity, referring both to Tenkua's game-like features and to its functionality for conversation, participatory futures ideation and decision making. The review considers the Tenkuä workshops conducted between 2016 and 2013, as well as its relationship with other futures games, a field that has experienced significant growth over the years. Consequently, this paper includes a compilation and analysis of such games around the world.

Keywords

Serious games, gamification, foresight, futures studies, social imagination

Introduction

Tenkuä is both a participatory model of foresight and planning and a serious game. Based on social imagination, the experience requires the participation of diverse people who are part of the same neighborhoods or contexts (businesses, organizations) so that, by identifying critical fissures (what is broken and affects them) and reflecting on their impact, they can imagine alternative long-term futures and tactics for change. Tenkuä is a guided and replicable model that enables conversations and context exploration, fosters awareness, and encourages decision-making and the participants' sense of agency.

The following paper aims to present the most recent developments and findings of Tenkuä around the following goals:

Conduct five iterations of Tenkuä in different states of Mexico to compile a corpus of diverse visions of the futures.

Analyze the corpus with a social semiotics framework. The corpus will include the 36 scenarios produced under the project and 30 more collected between 2015 and 2021.

Explore possible correlations between attendants' demographics and their future visions.

Assess the project's social impact in the middle term by following up with participants.

Improve Tenkuä's model and the card-deck design according to the results.

How has this experience changed over the years? What playful attributes can be identified in Tenkuä? What valuable lessons can be learned from the early years of this experience? What can we learn from other games that combine social imagination and long-term thinking? These are the questions that will be addressed.

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About the Foresight and Games Duo
Between January and November 2023, an online mapping of foresight games occurred. The research included the keywords "games" and "foresight" in English, French, German, Italian, and Spanish. It yielded 77 games (see Table 1) from Australia, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Japan, Mexico, the Netherlands, the Philippines, Poland, Thailand, the United Kingdom, and the United States. These are playful solutions that contribute to fostering future thinking at some level.

Table 1. Futures Games Around the World Breakdown.
A link with information or a downloadable version of the game is included, except for Tenkuä, which is being redesigned as part of this research.
Source: Ruiz, M., Sweeney, J. & Paniagua, K. (2023), with information from all referenced sources.

Title	Country	Authors
2030 SDGs GAME	Japan	Takeo Inamura, Nobuhide Fukui, Takeshi Muranaka (Imacocollabo)
AfroRithms from the Future	US	Lonny Brooks, Eli Kosminsky, Equitable Games Group.
AKAW	Germany	Christian Rauch, Monja Gentschow, Jana Marei
Avenir 20xx	France	Orange, Philippe Michel
Building Utopia Deck	US	Christina Harrington, Jennifer Roberts, Kirsten Bray, N'Deye Diakhate
Cards of Hope	Finland	Liisa Poussa, Terhi Ylikoski (Sitra)
Catalysts for Change	US	Kathi Vian, Tessa Finlev, David Evan Harris, Maureen Kirchner, Sara Skvirsky (IFTF)
Causal Layered Analysis Game (CLA)	Australia	Sohail Inayatullah
COLLAPSE	Netherlands	Ginie Servant-Miklos (ESSB)
Data Control Wars	Spain	Andreu Belsunces, Grace Turtle, Antonio Calleja, Raul Nieves, Bani Brusadin, Ignasi Ayats
Decode the Future	US	Leah Zaidi, Emily Caufield (FTI)
Design Fiction Design Brief Creation Playing Cards Deck	US	Julian Bleecker (Near Future Laboratory)

Dreams and Disruptions: A Foresight Game	Philippines	Shermon Cruz (Center for Engaged Foresight)
Dualities: Futures Generator	Denmark	Lasse Underbjerg (Designit)
End of The World 2075	US	Trond Undheim (Yegii, Inc)
Evoke	US	Jane McGonigal
Face the Future	US	Institute For The Future
FloodSim	UK	Norwich Union, PlayGen
Foresight Engine	US	Institute For The Future
Futrep	UK	Smithery Ltd.
Future Disruptions Game	Germany	Cornelia Daheim (future Impacts)
Future Geoscientists	UK	Finn Strivens, Kathryn Hadler, Imperial College London Societal Engagement team
Future of Data Governance (SES)	Finland	UN Global Pulse
Future of Food	Poland	Lukasz Jarzabek, et. al.
Future: A Game of Strategy, Influence, and Chance	US	Ted Gordon, Olaf Helmer, Hans Goldschmidt
Futurecast	Finland	UN Global Pulse
Futures	Canada	Andrew Luba
Futures Bazaar	UK	Filippo Cuttica, Stuart Candy
Futures Cards	Finland	UN Global Pulse
Futures Out Loud	US	Leigh Cook, Bo Roe, Eric Boye, Matt Rickard, Katelyn Bottoms.
Futurescool	Belgium	Abdselam et al. / Thomas D'hooge
FutureStories	US	FNDI Limited Partnership
FuturGov Game	Belgium	EU Policy Lab
Futurish Cards	Italy	Angelica Fontana, Silvio Cioni

Futurs Le Jeu	France	Niels de Fraguier, Mélanie Ramamonjisoa
Game of Life 2050	UK	Bill Bruck, Thomas Carleton, Valerie Steuck Carleton, Russell Kolton, Charlie Wolf ArtistRussell Kolton
Global Futures Game	US	Bruck et al. (Earthrise Inc.)
Governance for the Future: An Inventor's Toolkit	US	Jake Dunagan, Bettina Warburg-Johnson, Rod Falcon, David Evan Harris (IFTF)
Hindsight 2030	US	Mike Masnick (Copia Institute), Randy Lubin (Leveraged Play)
IFF World Game	UK	Tony Hodgson
Imagining Health Futures	US	Randy Lubin (Leveraged Play), Jason Morningstar (Bully Pulpit Games)
IMPACT: A Foresight Game	Canada	Robert Bolton et al. (Idea Couture)
Le jeu de la transition	France	Sophie Fourquet-Mahéo, Daniel Kaplan, Jacques-François Marchandise
Living Futures	Denmark	Danish Design Centre
Make the Future Now	US	Institute For The Future
Money City	US	Mike Masnick & Leigh Beadon (Copia Institute), Randy Lubin (Leveraged Play)
Oblique Futures	France	NA
Our Futures	UK	John Sweeney, Jose Ramos (NESTA)
Peek	UK	Evan Raskob, Paris Salinas
People Power	Thailand/UK	Adam Sharpe (Futurely)
Prospect'Us	France	Sébastien Rolland, Claire Boisset, Pascal Mériaux
Que mangerons-nous en 2050? [What will we eat in 2050?]	France	Solagro Association
Scenario Exploration System (SES)	Belgium	European Commission

Scenarios - The Game	Netherlands	Eric van der Kooij (Games for Cities)
Scenona Cards - Future Journey	Germany	Felix M. Wieduwilt, Friederike Riemer
SDG Boardgame	UK	Finn Strivens
SES Work/Tech 2050	Greece	UNESCO Chair on Futures Research, JRC and the Millennium Project
Shocks to the System: Fast forward to 2028	UK	Forum for the Future, ClimateWorks
Solarpunk Futures	US	Nick Lyell, Max Puchalsky, Solarpunk Surf Club
Speculative Pasts and Futures	Greece	Epaminondas Christofilopoulos (FORTH)
STEEP: Foresight Cards	Netherlands	IVTO
Superstruct	US	Jane McGonigal, Kathi Vian (IFTF)
Tenkuä	Mexico	Karla Paniagua, Paulina Cornejo
The Adaptation Game	Australia	TAG, Deakin University, Merri-bek Council
The New Economics Card Game	US	Institute for the Future
The Future Game 2050	Germany	Felix M. Wieduwilt, Friederike Riemer
The Future of Coordination	US	Jason Tester, Rod Falcon, Devin Fidler, Anthony Townsend (IFTF)
The Polak Game	US/Australia	Stuart Candy, Peter Hayward
The Sarkar Game	Australia	Peter Hayward, Joseph Voros, Sohail
The Thing From the Future	Canada	Stuart Candy, Jeff Watson (Situation Lab)
The Work Kit of Design Fiction	US	Julian Bleecker (Near Future Laboratory)
Things From The Future Minecragt: Education Edition	Greece	UNESCO Chair on Futures Research in FORTH / Harry Christophilopoulos

Time Machine	US	Matthew Manos (verynice)
Walking the Future	US	Randy Lubin (Leveraged Play)
Water 2050	US	Totem Games, Water Environment Federation
Working Futures	US	Mike Masnick (Copia Institute), Randy Lubin (Leveraged Play)
World Game / World Peace Game	US	Buckminster Fuller

The exploration showed an upswing in the design and launch of games related to the foresight process, mainly in this millennium. All games have in common an interest in exploring change; that is, they address the possibility that the current situation, whatever it may be, could be different: How could this happen? Who are the stakeholders? What are the trends, the driving forces, and the possible scenarios that could function as levers to change in some direction? These are some of the questions that appeared during the game's mapping.

Three initiatives from the middle and end of the 20th century deserve special mention. They may not be the only ones of note, but they were identified during the exploration.

World Game (1961)

Buckminster Fuller developed this simulation tool for a class at the Southern Illinois University Edwardsville in 1961 and later proposed it for the Universal Exposition of Montreal in 1967 (Stott, 2022). The game aimed to create a complex, collaborative, and environmentally intelligent human system through the following steps: inventory, trends, strategy, and scenario building. Since then, this tool has inspired workshops and new games inspired by its operating principles.

Future (1966)

This game was created by Hans Goldschmidt, Theodore Gordon, and Olaf Helmer. The play explores various changes and their probability based on trends and enablers. Unlike Bucky Fuller's game, this one intended to bring large audiences closer to imaginative exercises about the future. Gordon and Helmer worked at the RAND Corporation in the 1960s. They wrote the report that provided the foundation for the game's content in an attempt to transcend the media sounding board and engage ordinary citizens in the adventure of exploring alternative futures (Smith, 2022).

FutureStories (1992)

This fast-paced scenario game includes a board and cards that pose situations (technological devices, extraordinary events, etc.) to spark the players' imagination.

Although these games do not directly inspire Tenkuä, this game undoubtedly inherits the interest in finding solutions to contemporary problems, giving a special place to analyzing the context, creativity, and narration of collectively inspired stories (eBay, 2023).

Although the mentioned games do not directly inspire Tenkuä, we recognize the common interest in finding solutions to contemporary problems, giving context analysis, creativity, and storytelling. The following cases directly influenced the creation of Tenkuä in terms of its sequence of play and presentation of results: *The Thing from the Future* (Candy & Watson, 2015) and *Time Machine* (Manos, n.d).

Further evidence of the vibrant rise of the link between games and futures is the profusion of papers on the subject

published in recent years in specialized journals; a quick search for materials in specialized repositories under the keywords "games," "futures," and "foresight" yields recent examples of interest such as The Polak Game, or: Where do you stand? (Hayward & Candy, 2017); Trends and Emerging Issues for Brunei Darussalam: The Futures Deck and Card Game (Cheong & Milojević, 2017); New Frontiers in Futures Games: Leveraging Game Sector Developments (Vervoort, 2019); The Making of Antarctic Futures: Participatory Game Design at the Interface Between Science and Policy (Pollio, Magee and Salazar, 2021); Playable Policy Design: The FuturGov Game as Means to Negotiate Future-Situated Policy Options (Vesnic-Alujevic & Rosa, 2022); Generic Futures and Serious Games: Lessons from 2040 for Social Innovation in Flanders, Belgium (De Vidts, 2023); The Polak Game and the Futures of Education – Are University Students Optimists or Pessimists about the Future of Education? (Beara & Dubovicki, 2023), among others.

(Serious) Games People Play

According to Lindsay Grace (2020), a game is "essentially structured play," and "the foundation of the structure is simply three things: goal, obstruction, and means. Players are given a goal to achieve, the designer incorporates an obstruction to the goal, and the designer provides a means to achieving that goal. Nearly every game can be framed as goal, obstruction, and means to achieve the goal." (p. 15) This definition is helpful because, with the rise of future-thinking paraphernalia, we observe a tendency to homologate the notion of toolkits (didactic material for collective ideation) and the idea of game.

In the spirit of achieving greater clarity, we take up again the attributes of Jesse Schell (2019, p. 42), for whom:
Games are entered willfully
Games have goals
Games have conflict
Games have rules
Games can be won and lost

Our exploration allowed us to identify that only some of the materials presented as games meet the attributes of games; for example, not all involve conflict, and not all include winning or losing mechanics. The characteristics of the minimum viable product contained in the collected collection include purpose, rules, and inputs to carry out the purpose.

According to Grace (2020, pp. 15-19), every game has these components:

Competition. Competition is intended to establish dominance or supremacy in something (a skill, a territory, a result). In the case of Tenkuä, there is no explicit competition. However, the participants, divided into teams, work under pressure to meet the deliverables in the set time, usually 4 hours.

Implements. The Tenkuä implements are the pack of cards, the circular board divided into four quadrants (drawn by the players themselves), and the materials to elaborate the scenarios, depending on the deliverable to be made (paper, colors, magazine clippings, construction cardboard, glue, etc.).

Territory. The territory of Tenkuä is established based on two variables defined by the team: the topic to explore (cracks) and the name of the city or neighborhood where the game will take place. Although this place is fictitious, it is based on real situations.

Inventory. This refers to what players accumulate during the game (points, coins, lives, etc.). This is one of the most relevant areas of opportunity in Tenkuä, allowing players to pose tactics in its current version. However, these tactics have no value as part of the inventory.

Rules. These should state how to apply 1-4. In the case of Tenkuä, the rules consider that players identify a topic from the card deck (or set another one not considered), that they do not think of solutions when counting cracks, and that the trend scenario is mandatory (the other chosen future arcs are optional); that they represent the scenario with words and images; that all team members collaborate in the process; that possible distracters (computers, cell phones and other stimuli) are turned off; and that they respect the time limit. These loopholes allow for a level of tension throughout the game, as well as a particular competitive spirit that goes hand in hand with the progress and collective imagination of the group. The timing of the session allows for sharing and commenting on each team's results.

Why is Tenkuä a game? Because it has a purpose (to imagine alternative futures for a given context, as well as the tactics to realize the most desirable scenarios or avoid the undesirable ones); an obstacle or conflict (the cracks

or fissures that citizens experience in their context) and because it has the means to solve the mechanics of the game (cards, board, analog or digital materials to create scenarios, etc.). However, the contrast between the universe of games we collected and the attributes of Grace and Schell allowed us to identify areas for improvement that will be taken up in the discussion.

Tenkuä is not just a game but a serious game. According to Grace (2020, p. 36), serious games contribute to understanding ordinary life; in that sense, Tenkuä fully complies with the notion of serious games. In playing it, the purpose is for the experience to be nourished by ordinary life, to generate an extraordinary and safe redoubt to reflect on the possibilities for change, to share the player's common visions of the future, and return to ordinary life with new eyes and ideas that can contribute to change that which keeps us from our best possible futures.

Pending issues crucial to improving Tenkuä's gameplay are related to competition (and thus the possibility of winning or losing) and inventory, which will be addressed in the Discussion section.

Social Imagination

Another confluence point of these games is the eagerness to conjure the social imagination, a concept approached from sociology, education, philosophy, or anthropology, among other disciplines, to explore the role of imagination in shaping society and culture. Coined by sociologist Charles Wright Mills in his book *The Sociological Imagination* (1959), to explore the interconnection between individual experiences and personal challenges —biographies— and the broader social structures and patterns —history. As Mills asserted, if people identified themselves within a society's history, they would be able to see the connection between their personal decisions and the development of society: "The future of human affairs is not merely some set of variables to be predicted. The future is what is to be decided—within the limits… of historical possibility" (Mills, p.174)

For sociologist Richard Sennett (1978), social imagination is vital to living together, participating in public life, and creating more interconnected and fluent communities. According to him, the loss of the public sphere would harm the ability to imagine and understand one another's experiences in urban environments.

A more recent approach to social imagination has been explored by Geoff Mulgan, who has also addressed it with social innovation. As he mentions in his book *Another World is Possible: How to Reignite Social and Political Imagination,* "any kind of social organization depends on imagination; something has to be thought before it can become real. So, imagination is the glue for any society and the only fuel for change. Present imagination helps societies cooperate and cohere. Future imagination helps to map out 'possibility spaces' —options for societies to consider and choose" (Mulgan, p. 270).

In the same book (2022), Mulgan argues that different ways of seeing can provide new ways of understanding and acting and explores the concept of social imagination as a tool to generate alternatives for change, which allows to be better prepared and open up new spaces of possibility. These can be as wide or narrow depending on the imagination and work people invest in communicating and transforming them into something actionable.

Also noteworthy is the work of Matthew DelSesto, who, in his book *Design and the Social Imagination* (2022), points out the need of new approaches to the notion we have of knowledge and power relations, suggesting this is possible to achieve through awakening the social imagination and creating possibilities for plural futures: "it is plural in the sense that 'the social' does not point toward a universal vision of society, but rather to pluriversal futures where many words can flourish and continue to be imagined" (DelSesto, p.19).

In line with these approaches, Tenkuä uses social imagination through a collaborative dynamic that allows participants to relate from their personal experiences to more complex realities and contexts of which they are also part. In doing so, it generates spaces of possibility and responses that could contribute to social change.

Tenkuä's Background

> "The broken city lives in the rituals and practices of planners, engineers, and developers. It lives in law and code, and in concrete and asphalt. It lives in our own habits, too. Those of us who care about the living city are going to have to fight for it in the streets, in the halls of government, in the legal and social codes that guide us, and in the ways we move and live and think […] Urban activists are taking design

– and their future- into their own hands" Charles Montgomery, *Happy City: Transforming Our Lives Through Urban Design*, 2013

Tenkuä's first version was created in 2016 by the Futures Studies Department and the Social Design Hub of CENTRO University (Mexico City). It aimed to develop a tool that would contribute to a better understanding of the context in which the university campus is located, while opening conversations, building bridges, and engaging a wide array of stakeholders who are part of the community (students, staff, faculty, and neighbors).

The model's background, conceptual foundation, and the history of its creation are described in the paper *Tenkuä: Designing Futures for Broken Cities* (2020). This work explains that the model is based on the generic foresight process of Joseph Voros (2003), including the stages of inputs (analysis of the system), foresight analysis (elaboration of future scenarios), outputs (vision of the desirable future), and strategy. The paper describes the game mechanics, and the tool design, as well as the importance of conversation as a binding process between strangers who, in the process of playing and imagining together, bond and get to know each other better.

Since its beginnings, the Tenkuä'project has evolved through three main phases, which are mentioned below.

Time Capsule (2016-2019)

During this phase (Figures 1 and 4), CENTRO ran workshops for neighbors, who were divided into teams with design students to assist them in the ideation and sketching process. The purpose was to encourage conversation about the future and challenge the idea of an inevitable dystopian destiny.

The model then included one deck of cards with the 15 Global Challenges (The Millennium Project, 2023), a deck with future archetypes, and a neighborhood monograph. Participants used these as inputs to create alternative futures scenarios.

Through this project, CENTRO sought to strengthen ties with neighbors and collaborate to design better answers to benefit the community and the environment. However, it soon became apparent that the workshop (open to the public) was receiving participants from other neighborhoods in the city, who were invited by people familiar with the experience (cousins, friends, co-workers).

Even though many participants came from seemingly different backgrounds and communities, this did not pose an obstacle to the workshop but rather the opposite. The wide diversity of participants confirmed that discomfort and anger were powerful tools of social cohesion when people identified common problems and concerns (insecurity, access to clean water, decent housing). Group discontent could be transformed into an opportunity to motivate change in another direction.

By the end of 2019, the Global Challenges deck was replaced by principles derived from the right to the city (Lefebvre, 1998). These principles were highly relevant because of the idea of a city for all citizens and their recent inclusion in the Political Constitution of Mexico City (Article 12, 2017). This was intended to raise awareness of the existence of this right while facilitating dialogue to identify problems or challenges in the communities.

While the thematic areas and decks have changed (Millennium et al. to the City), all prototypes and adjustments to the model have included the detection of common problems and concerns (or what, in prospective terms, are known as "threats") based on a systemic vision that facilitates their transformation.

Fig 1. Tenkuä's design, stage I

Tenkuä: Designing Futures for Broken Cities (2020-2021)

During this phase (figures 2 and 5), a straightforward question about what is broken in the community (socially, culturally, economically, etc.) was included as a starting point. The Right to the City was kept as a framework, and the archetypes were improved to explain better the future scenarios or scenarios each team should create.

This phase reaffirmed the importance of discussing the discomfort and anger caused by what is not working in the communities. To simplify the workshop immersion, a metaphor of rupture or crack was introduced, based on a framework proposed by Carla Cipolla (Cipolla et al., 2017) and, in turn, inspired by Zuenir Ventura's "broken city" concept (1994). As a result, this new model was named Tenkuä, broken lip in the Nahuatl language.

Likewise, stakeholder (Eden & Ackerman, 2010) and actants mapping (Latour, 1999; Sznell, 2021) were rethought to consider people, nature, and other actors or non-human elements that could be related to or affected by the identified cracks.

This new phase brought the following pipeline improvements:

1) Identify and discuss the cracks or the problems considered critical by the attendants in a specific context and choose the most significant for the table.
2) Mapping stakeholders, actants, and resources around the chosen crack or challenge.
3) Building long-term scenarios and founding an imaginary city/town where they occur.
4) Defining individual actions that can be taken in the short term (develop agency).
5) Evidence shows that there must be a reasoned connection between the cracks, the stakeholders and actants, and the argumentative structure of the scenario, which must be the product of the dragging and narrative connection of the identified elements.

These improvements followed the Voros-inspired four steps (inputs, foresight, outputs, strategy, Voros, 2003) but were more seamless and integrated.

The first online sessions occurred during the COVID-19 epidemic, demonstrating that the model could work through online collaboration with participants from different cities and countries. This made it clear that, despite physical and cultural distances, common problems affect human systems at all scales.

At the end of 2021, the thematic package with concepts on the Right to the City was replaced by another with a thematic selection inspired by past versions and some of the Sustainable Development Goals (UN, 2023) organized in the following themes: environment, mobility, production and consumption, supply chains, and gender. The adjustment was due to the request to deliver a specific workshop to for-profit and non-profit organizations whose diverse agendas required more open issues applicable to their organizations.

Fig 2. Tenkuä's design, stage II

Tenkuä: Designing Futures for Broken Contexts (2022-2023)

The improvements made to work with civil organizations by the end of 2022 brought the project to phase III (figures 3, 6, 7), in which the original sequence was maintained, optimizing the deck to include different social systems (organizations, communities, cities, neighborhoods) that could be improved through participatory foresight and planning.

    The gathering of information regarding individual actions after Tenkuä's experience began on this phase.

Fig 3. Tenkuä's design, stage III

Fig 4. Tenkuä's experience stage I

Fig 5. Tenkuä's experience stage II

Fig 6. Tenkuä's experience stage III
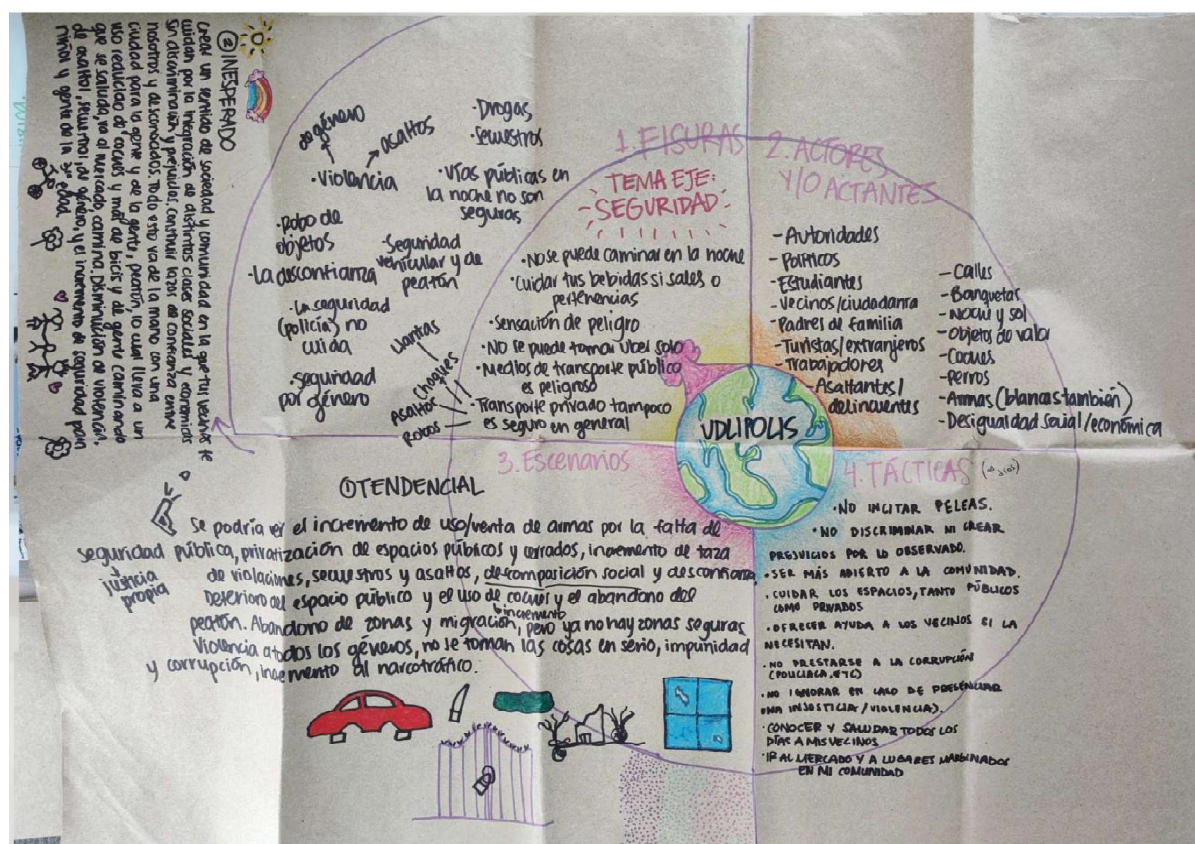
Fig 7. Tenkuä's board, phase III, has four quadrants: fissures, actors and actors, scenarios, and actions.

Table 2 summarizes the total number of workshops held to date.

The information shown contains only game sessions organized by CENTRO, some with key partnerships. Throughout these years, several sessions convened by other organizations have been known, however, only in a few cases the results have been shared (such was the case of FONCIDE, a workshop organized by a different team who adapted the game sharing results and suggestions for improvement), therefore not all iterations of Tenkuä are included in this table.

Table 2. Tenkuä's Break Down

Workshop	Date	Venue	Attendants (neighbors, teachers, students)	Outputs (scenarios)
Pilot	Sep 17, 2016	On-site, CENTRO, Mexico City	17	6
1	Nov 11, 2017,	On-site, CENTRO, Mexico City	17	4
2	Mar 10, 2018	On-site, CENTRO, Mexico City	16	4
3	Apr 7, 2018	On-site, CENTRO, Mexico City	18	4
4	Aug 18, 2018	On-site, CENTRO, Mexico City	21	6
5	Feb 9, 2019	On-site, CENTRO, Mexico City	7	2
6	Oct 28, 2019	On-site Universidad de los Andes, Bogotá, Colombia.	11	4
7	Jan 16-17, 2020	On-site Piso 16 UNAM, Mexico City (special activity for Taubman College - Michigan University group)	19	5
9	Feb 1, 2020	On-site Universidad de Nariño, Pasto, Colombia	20	13
8	April 29, 2020	FOINCIDE, Bogotá, Colombia	15	4
10	Jul 7-9, 2020	Online - Zoom, CENTRO	65	13
11	Jun 24, 2021	Online - Zoom, CENTRO	23	5
12	Nov 11, 2021	Online Participatory Futures Global Swarm	14	4

13	Dec 7, 2021	On-site, CEMEFI, Mexico City	19	4
14	Sep 24, 2022	On-site Fundación Konrad Adenauer, Mexico City	31	4
15	Ene 6, 2023	*On-site Instituto Tecnológico de Sonora	42	4
16	Feb 13, 2023	*On-site Universidad Autónoma de Querétaro	31	4
17	May 12 & 13, 2023	*On-site, CENTRO, Mexico City	9	4
18	June 1, 2023	*On-site Universidad Iberoamericana Mexico City	11	NA[1]
19	June 9, 2023	*On-site Iteso, Guadalajara	44	7
20	Jul 10, 2023	*On-Site Akadem / Actuemos Unidos por un San Pedro Sustentable	79	9
21	Sep 1, 2023	*On-site Universidad de la Américas Puebla	59	5
22	Nov 6, 2023	*UNICESMAG, Colombia	25	10
Total			613[2]	128

*Workshops conducted as part of the project developed for the Prince Mohammad Bin Fahd Center for Futuristic Studies Grant.

It is important to explain that, during the Tenkuä sequence, each team prepares a circular board (Figure 8) that is divided into four quadrants. In the middle of the board, they should write the name of an imaginary city or neighborhood and then complete each quadrant as follows:

　　1) Fissures (critical signals of change) related to the theme selected by the table.
　　2) Stakeholders (humans) and actants (non-humans) related to the fissures, causing them or being affected by them.
　　3) Two scenarios.
　　4) At least one action that can be taken in the short or medium term to contribute to the desirable scenario or avoid the undesirable one; the proposed action must be within the player's reach.
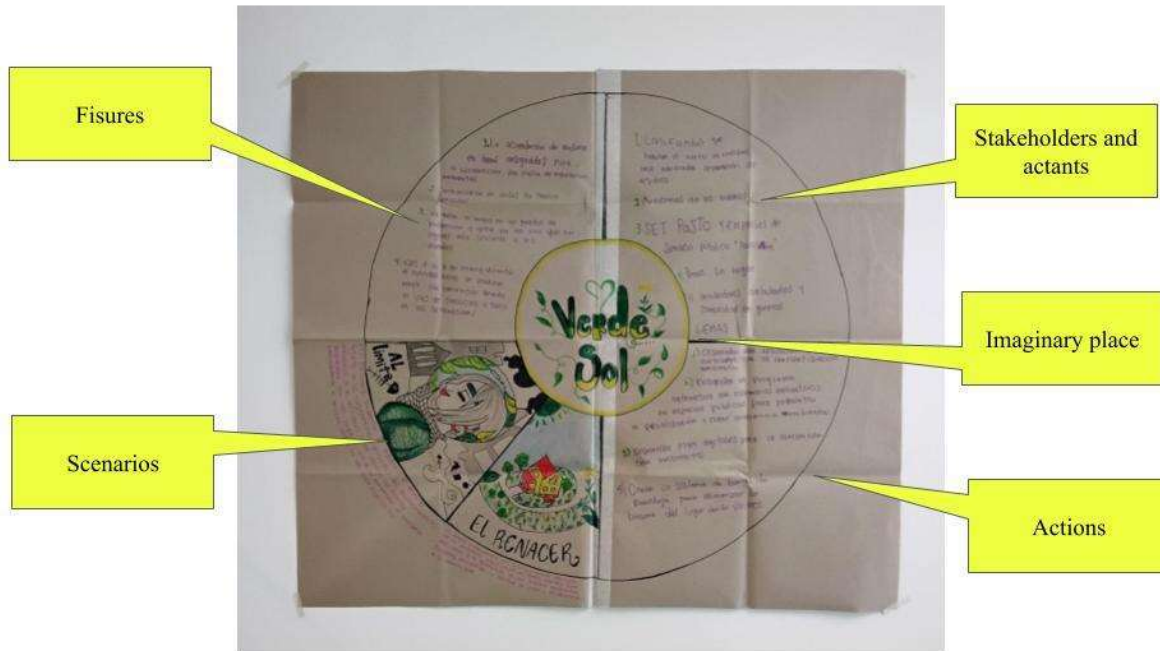
Fig 8. Board prepared by students of UNICESMAG University, Nariño, Colombia. 2023.

This clarification is necessary because, although the synthesis presented in Table 2 focuses on the scenarios, other deliverables are generated during the working session.

Discussion

A relevant finding concerns foresight games around the world. Initially, the search was limited to the Internet and the combination of games and futures in Spanish, English, Italian, French, and German. However, as the exploration progressed, the research team got recommendations from game developers and users, enriching the list. In addition, during the annual conference of the World Futures Studies Federation in Paris (2023), a round table on games and futures was held, and other references were offered to optimize the mapping.

Despite the linguistic limit, it is a fact that there is a boom in the creation and launch of games that promote imagination and conversation in the future, and Table 1 gives an account of it. This is due, among other factors, to the interest in collective imagination about the future, the need to gain answers in an era of high uncertainty, and the strengthening of a growing market that adds alternatives for group learning experiences, as many of these games and toolkits are marketed as educational tools or as supplies for inspirational workshops.

The mapping also revealed that these games use different gadgets (cards, tokens, dice, boards, virtual reality environments), and they mostly share a standard pipeline: combining specific prompts (trends, emerging facts, forces of change) to produce future scenarios in different formats (Tenkuä does not escape from this logic). This opens up a question that requires further discussion: To what extent does this proliferation of games contribute to a status quo that reproduces a set of beliefs about how the future should be imagined?

The belief that imagining alternative futures is desirable is widespread. In this sense, it is also thought-provoking the idea emphasized by Mulgan (2022) of how social imagination can "open up new spaces of possibility." However, to what extent do the logic of these tools contribute to a limited repertoire of an echo chamber that requires greater openness and variety? This is an open question that awaits multiple answers.

Another finding concerning Tenkuä, which could well be extended to other similar games worldwide, is the difficulty in bridging the gap between social imagination and social action or the connection between personal

decisions and the development of society (Mills, 1959). Despite the profusion of scenarios, there is little evidence that these future-imagining exercises (at least in the case of Tenkuä) bring about concrete actions undertaken by participants. In this regard, perhaps games tend to reproduce a split repeated in the professional domain, where futures studies practitioners do not necessarily guide strategy ideation and strategy practitioners do not necessarily guide long-term scenario ideation processes. If so, this would point to a crucial and urgent pending issue.

In the case of Tenkuä, in 2023, a follow-up on the actions taken by participants after the workshop was included. This check-up was carried out in 4 iterations using a survey from which a moderate response was obtained. For instance, 35% of the participants in the Sonora workshop answered the survey, of which 20% stated that they remembered the proposed actions and had put them into practice; likewise, 15% of the participants in the Nuevo Leon workshop answered the follow-up survey, of which 33% stated that they remembered the proposed actions and had put them into practice (Cornejo & Paniagua, 2023).

While it could be said that this limited data collection already constitutes a glimpse of evidence that Tenkuä helps to connect future imagination and action (or, at least, to become aware of the relationship between the future and the present), some uncertainty remains, as it cannot be verified that the actions reported by participants have actually occurred and are indeed the product of their Tenkuä experience. In this sense, the outcome remains unclear.

The initial proposal for the Prince Mohammad Bin Fahd Center for Futurist Studies grant project, was to carry out at least one Tenkuä workshop in each region of Mexico. Although these were held in the northwest, northeast, center and west of the country, by the end of the project, the southeast workshop had not been held, among other reasons, due to insecurity and social conflicts in the area. In this regard, one of the results of this study is bittersweet because where the possibility of imagining alternative futures is critical, the fissures of the present are so blatant, making it difficult to imagine other possibilities in the long term.

Regarding the invitation to host a Tenkuä workshop for this project, this was shared with partner venues along with a list of recommendations that mention the importance of involving the surrounding community (students, faculty, staff, neighbors) in the experience. Whereas some hosts had a very close relationship with their neighbors (sometimes faculty and staff were also neighbors), making it quite natural to convene a working session, hosting an invitation to other organizations, meant making them aware of the relevance of inviting a diversity of voices from the community to take part on a participatory futures and social imagination workshop. In this regard, since its beginning in 2016, the Tenkuä model has maintained the spirit of bringing stakeholders together in a known ground that, through conversation, makes visible the threads that connect them, regardless of the possible outcome of this connection.

Each of the sessions included a wrap-up of results and feedback from the participants to improve the Tenkuä experience. This was followed by the authors' conclusions based on the iterations and mapping of future games. The following optimizations were identified:

    Improve the instructional design of the game, making the steps more straightforward and more fluid.

    Improve the gamification of the process, adding attributes that make competition between teams possible and improving both the rules and the inventory.

    Improve the archetypes for scenario construction.

    Improve the system for ideation and follow-up of actions (tactics) derived from the experience.

    Reinforce the idea that follow-up actions are intervention points that support the repair of the fissures detected at the beginning of the game.

    Include jokers in the various decks of cards to expand the repertoire of thematic possibilities proposed by the participants.

    Include a specific topic of climate change.

    Include a topic related to climate change.

    Lengthen the scenario ideation period to boost the speculative exercise.

    Promote fieldwork as a complementary exercise before the Tenkuä activity to generate engagement and deepen the observation of the context.

    Ensure time for dialogue and exchange between teams, by sharing one of their scenarios and some tactics with the other teams.

What do the scenarios say about future visions? The formal analysis of the resulting scenarios represents a medium-term task yet to be carried out. However, a preliminary exploration of the corpus points to the recurrence

of themes such as fair access to drinking water, pollution, mobility, social inequality, political crisis, technological solutionism, crime, culture, dignified housing, food access, public participation, economic crisis, climate crisis, environmental risks, among others.

It should be clarified that the interests of the table may guide the choice of themes but also by the limits that the cards imply; this bias will be corrected in the next version of the game by introducing jokers that support themes and scenario archetypes suggested by the players; despite these areas of opportunity, it was possible to collect sufficient evidence that Tenkuä offers a territory for the expression of desires and fears about the future.

Conclusion

Regarding the compilation of futures games, some cases offered little information about the experience and it was impossible to corroborate the first source of the game mechanics. Despite this, it was a pleasant surprise to find that most of the identified cases had an available downloadable version, allowing it to be played for better understanding of dynamics. The exploration of different games, their scope and the assessment of their achievable results is a research project to be developed within the framework of the UNESCO Chair Design Methods for Democratic Access to Futures Imagination of which CENTRO is the holder.

As already mentioned, it is difficult to prove the medium-term impact of Tenkuä in terms of carrying out individual actions to bring about change. However, the participation and interest shown in the workshops suggest that Tenkuä can be a fun and valuable tool to bring diverse people together to talk and reflect about the fissures in their communities and imagine different futures that can lead to other possible and desirable worlds for them and their natural environment.

The workshops conducted since the beginning of the project, but more emphatically from 2023 onwards, have yielded sufficient information to improve the workshop experience and its results.

The most relevant improvements are those that enhance the gamification experience, the widening of the players' margin of decision, and the elements of the workshop that allow the follow-up of the actions derived from the experience.

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Notes

1. This workshop was held within the framework of a congress, and scenarios could not be developed due
to time constraints.
2. The number of workshop participants requires methodological clarification. Although a registration form
was sent in all cases so the host organization could share it with participants and identify gender and
relation to it (student, teacher, or neighbor), not all workshop participants were registered. Likewise, the
register shows people who must send the format days in advance. This cultural factor implies both an
under-registration and an over-registration in the number of participants that should be estimated.

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