The complexities of language learning in the wild:
Understanding the role of children's game-playing in learning English

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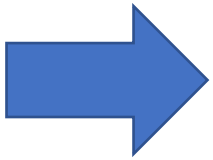
Language learning 'in the wild':
Implications of children's playing of online games in English for their language learning

Interested in understanding:
(1) How children learn English through game-playing
(2) How children perceive such learning



A tremendous amount of complexity in children's game-playing and their perceptions

Outline of my talk

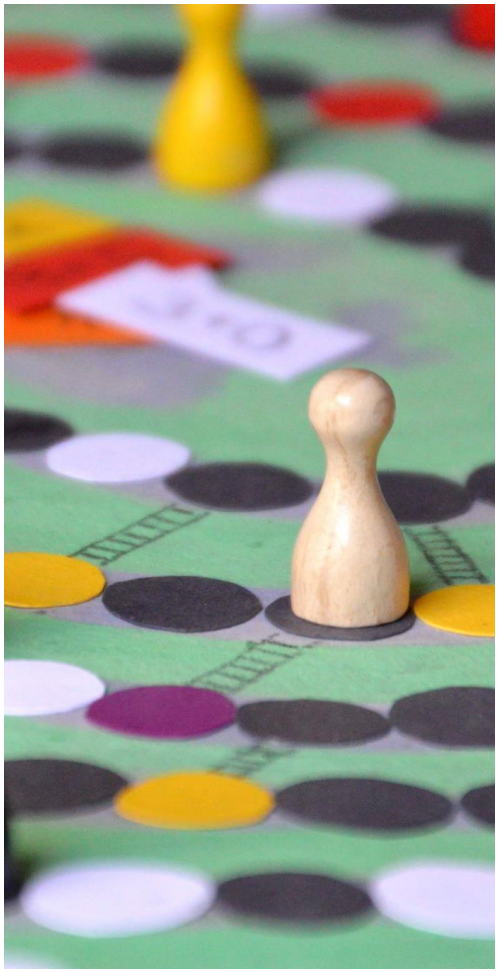
Introduction

Complexities and challenges

Suggestions for future research

Introduction

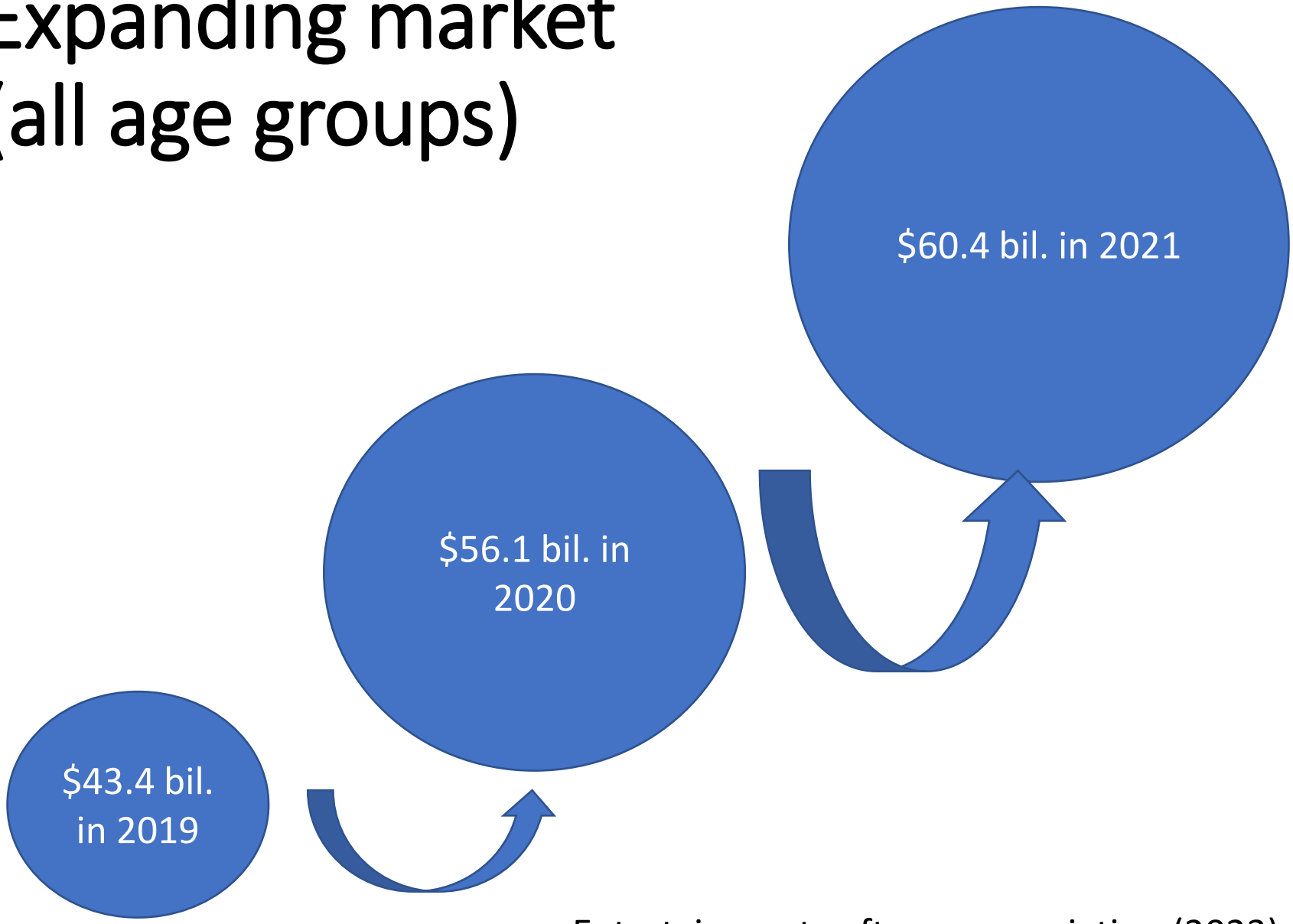
Why digital games?



What is a game?

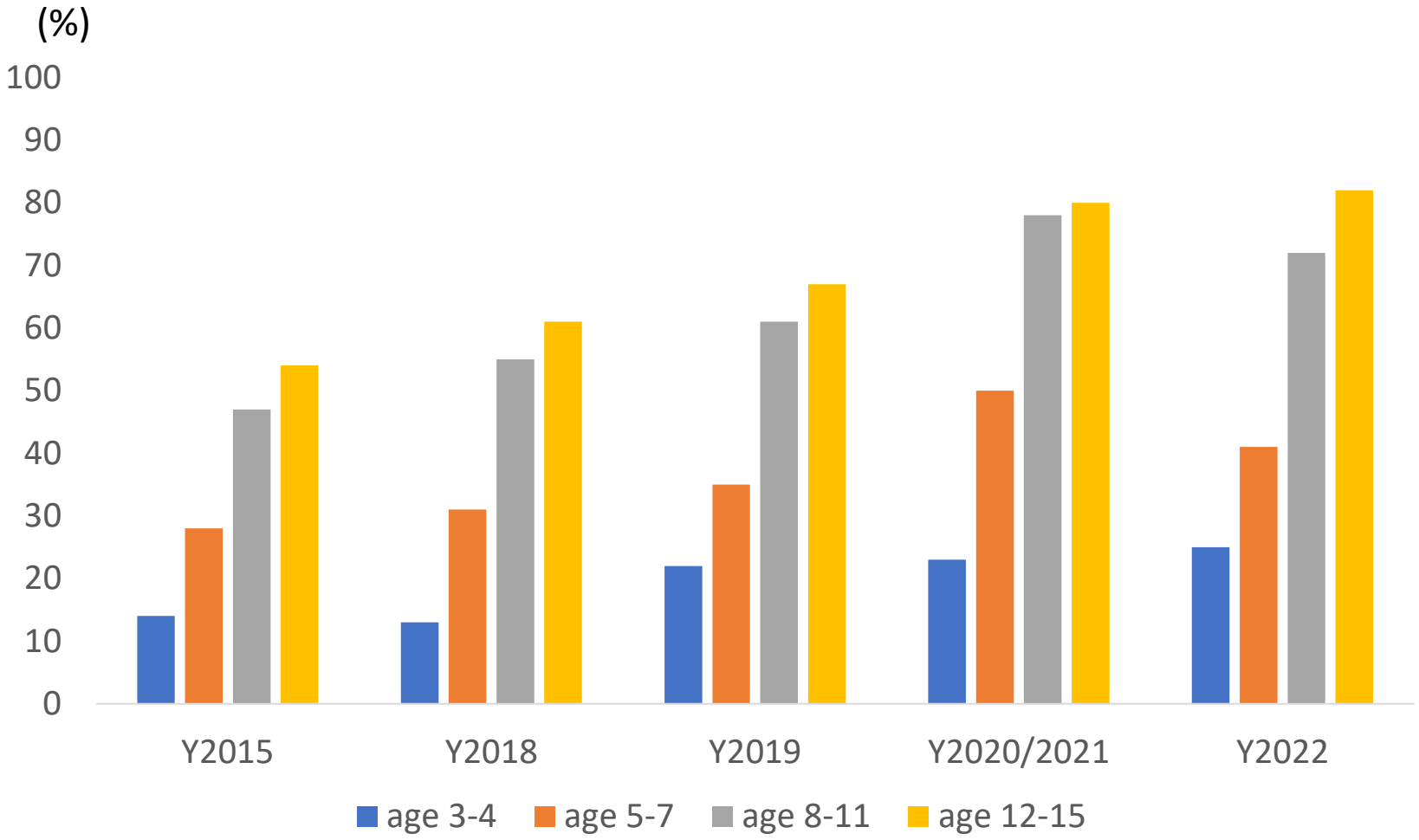
- Games – a type of play with goals and rules; difficult to define precisely
- Used by people in all cultures to acquire various knowledge and skills
- Some features in digital games (challenge, fantasy, and curiosity, Malone, 1981) – intrinsic motivation for engaging in tasks.

Expanding market (all age groups)



Entertainment software association (2023)

Percentage of children in the UK who ever play digital games



Statista (2023)

Parental beliefs (in the U.S.)

- 77% of parents play games with their children at least weekly in 2022 (55% in 2020)
- Parents agree that video games
  - can be educational (86%)
  - help develop teamwork and collaboration (88%)
  - help develop problem-solving skills (91%)
  - help develop communication skills (80%)
  - help teach kids how to win and lose in a healthy manner (81%)

Entertainment software association (2023)

Potential benefits to use digital games for language learning

Important elements for successful language learning

1. Having meaningful input and active use of language
2. Engaging in cognitively challenging and enjoyable tasks
3. Making use of repetition (iteration)

Different cognitive styles between game and pre-game generations?

	Game generation	Pre-game generation
1	Twitch speed	Conventional speed
2	Parallel processing	Linear processing
3	Graphics fi	
4	Rand	
5	Cor	
6	Activ	
7	Play	
8	Payoff	Patience
9	Fantasy	Reality
10	Technology-as-friend	Technology-as-foe

Potential differences in cognitive styles

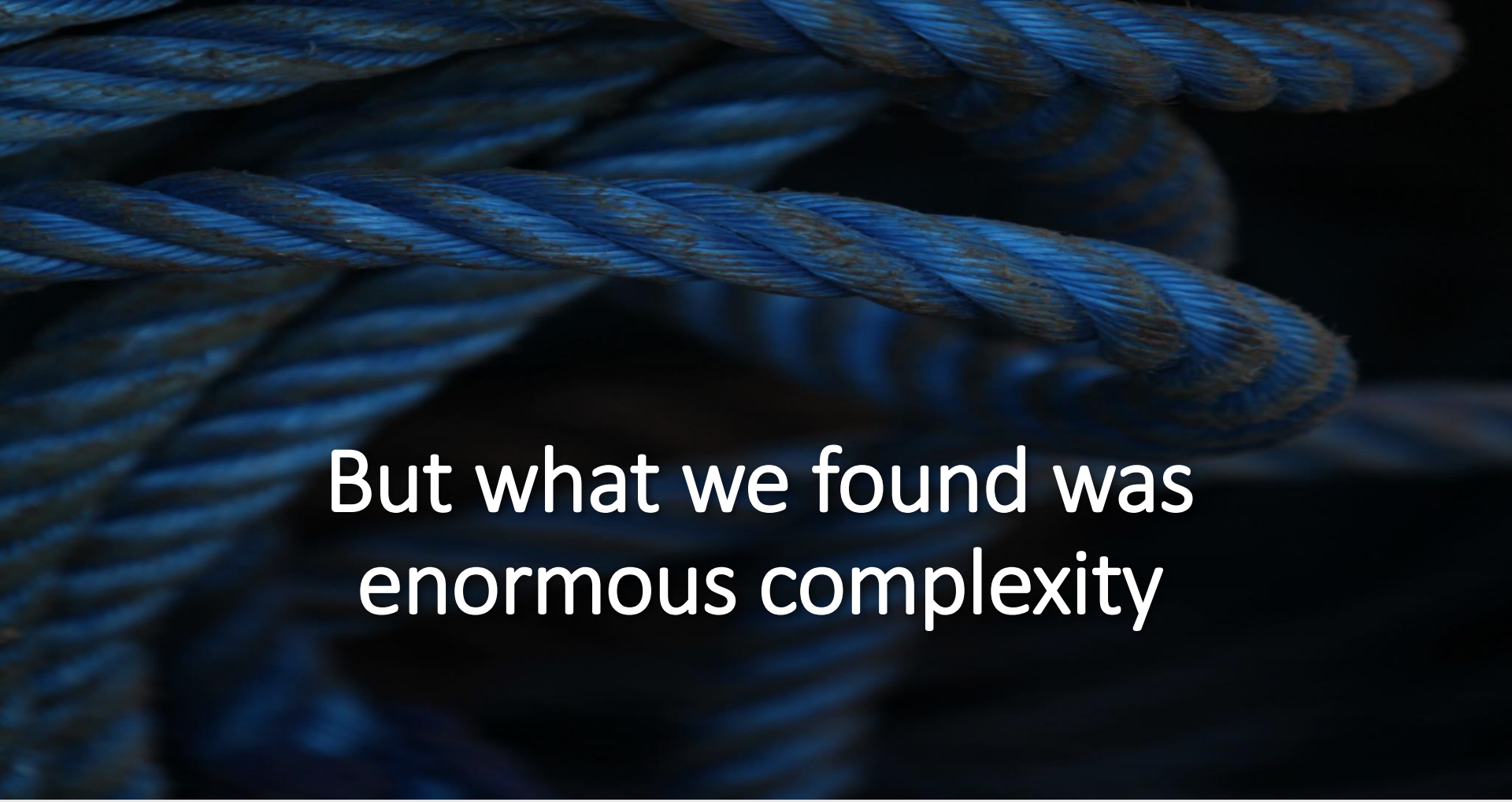
Source: Prensky (2001)

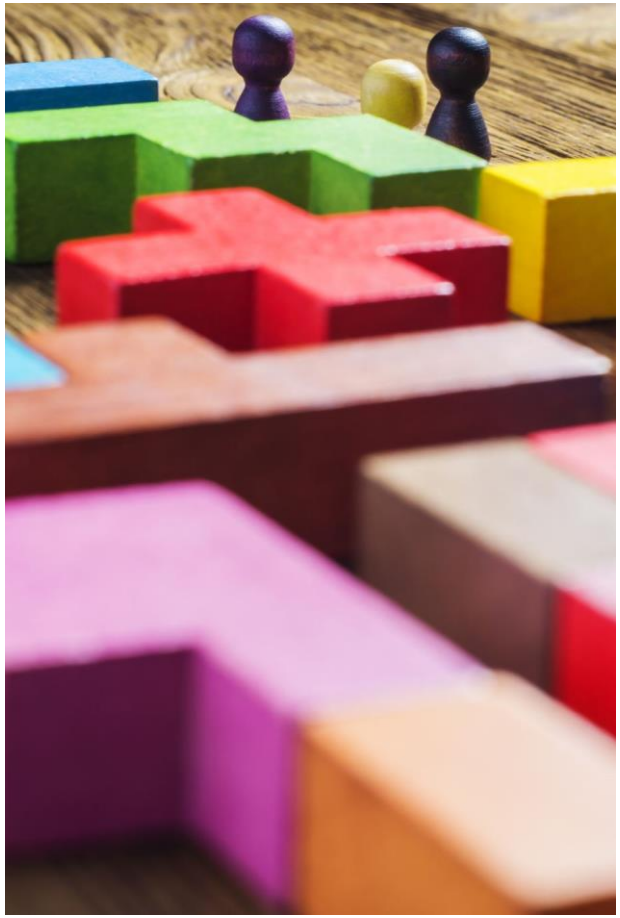
Digital generation - learners are changing

- Many children seem to be exposed to digital games from a very early stage in life
- Digital games have potentially useful for language learning
- The game generation has potentially different cognitive styles and strategies – using digital games when learning English must be promising

How do children learn English through digital games?

- Children's game-playing behaviors
- Children's perception


But what we found was
enormous complexity



Complexities

(1) how to account for various multilayered and interdependent contextual factors in understanding children's behaviors and perceptions of game-playing

(2) how to reconceptualize game functions to go beyond their intended objectives

(3) how to define 'outcomes'

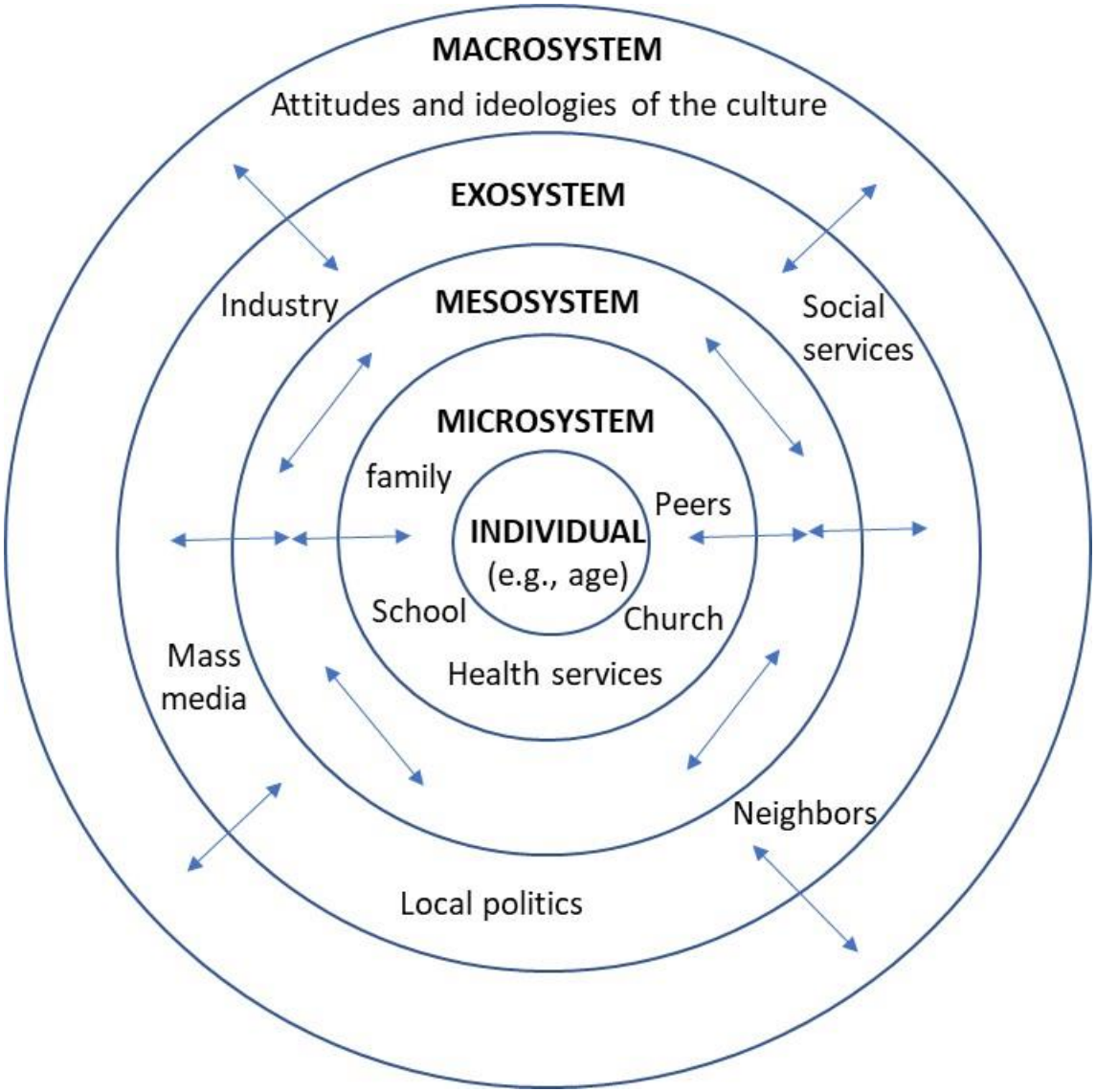
(4) how to interpret children's perceptions

(5) how to contextualize children's game-playing in rapidly and dynamically changing environments.

Complexity 1

How to account for various multilayered and interdependent contextual factors in understanding children's behaviors and perceptions of game-playing

Bronfenbrenner's (1992) Ecological Systems Theory



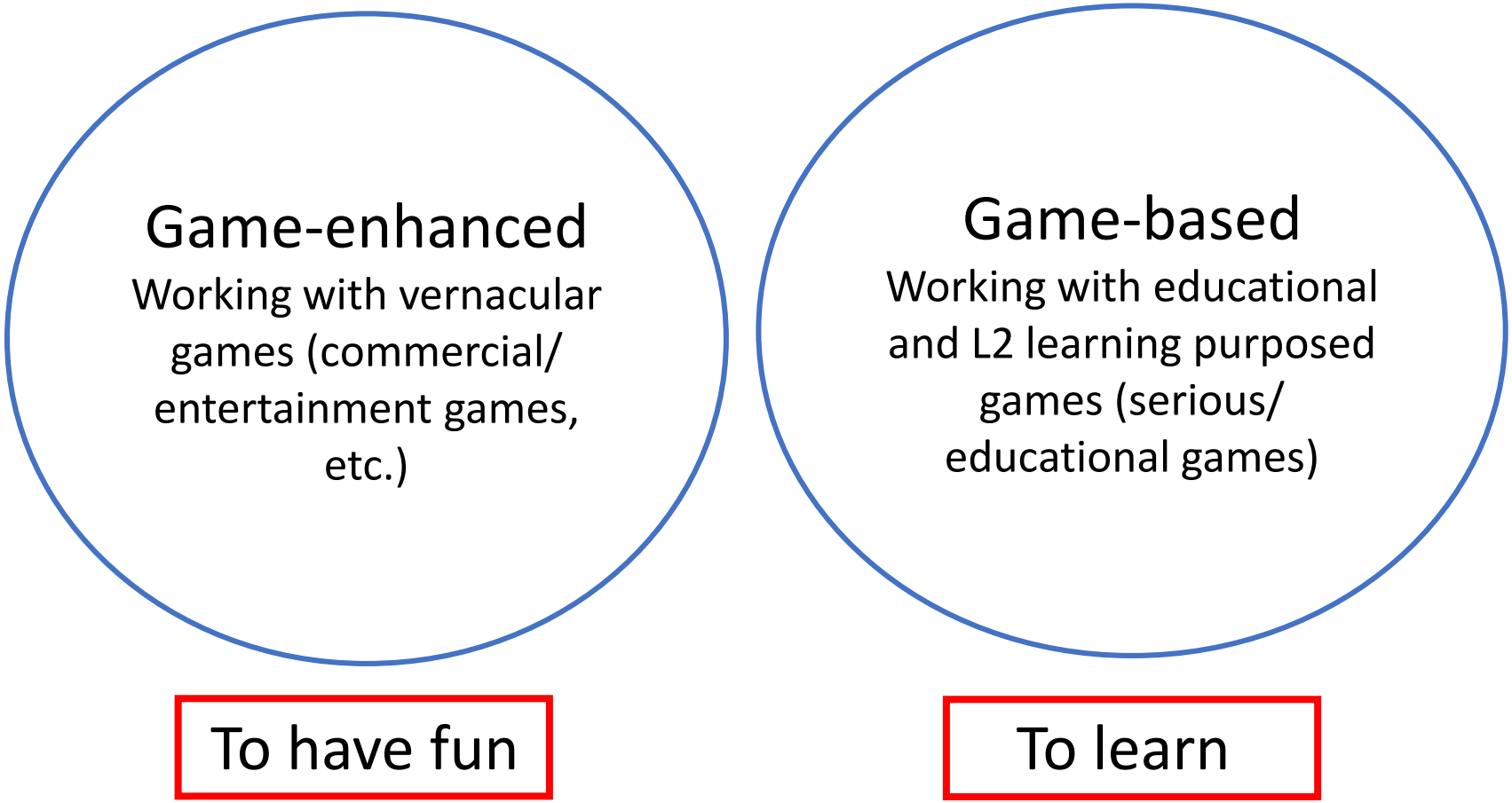
Interrelated contextual factors

- **Children's attributes**
  - Preferred learning strategies
  - Gender
- **Peers**
  - Peer networks, peer pressure
- **Linguistic environments**
  - Language(s) spoken at home, school, and community/society
  - Game availability in L1
- **Family**
  - Internet access and other digital technology devices
  - Family game-playing policies
  - Parents' game-playing behaviors
- **School**
  - Private vs. public
  - School policy on games and digital technology
- **Community/society**
  - Societal perception towards games in learning

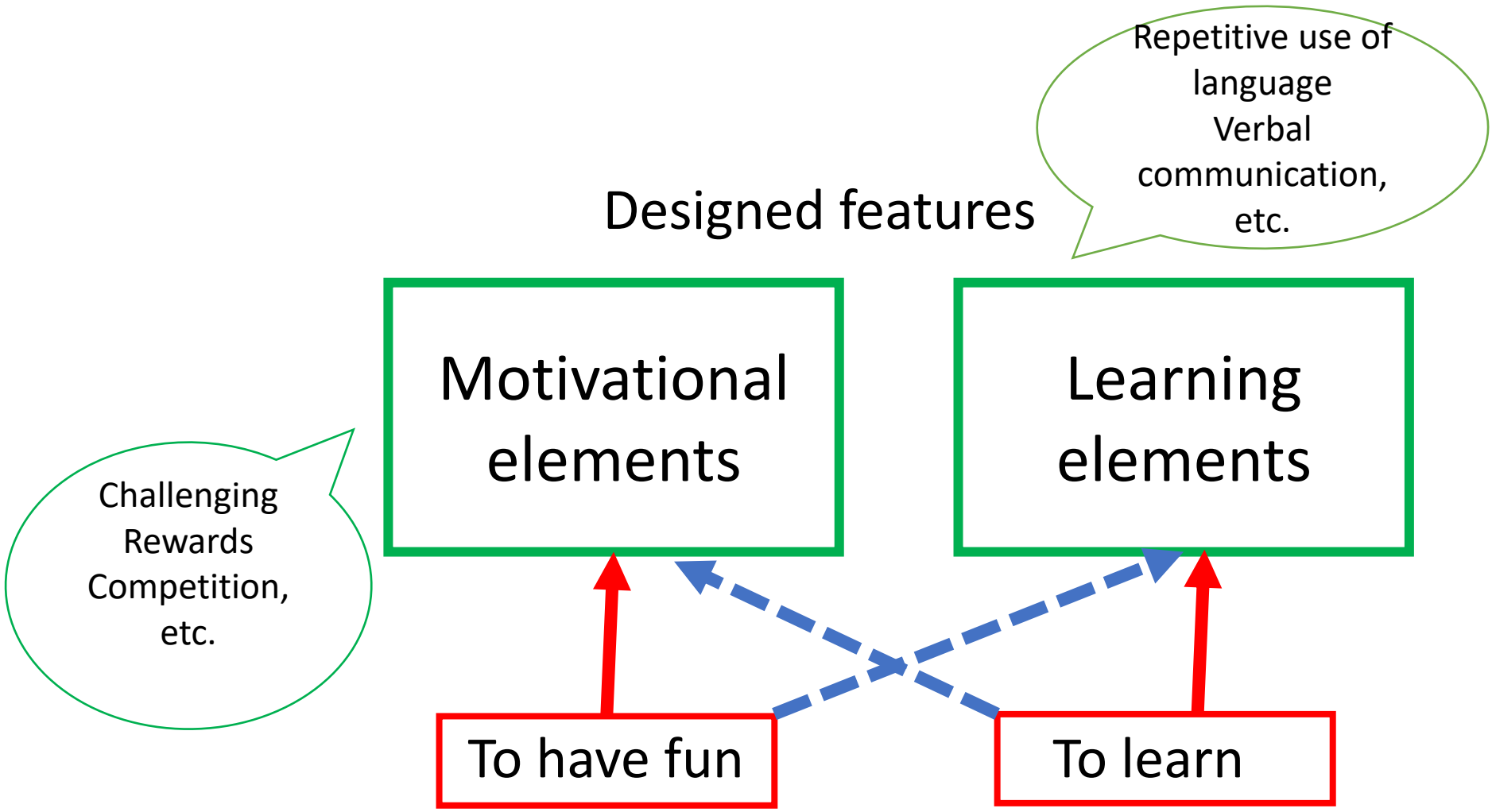
Complexity 2

How to reconceptualize game functions to go beyond their intended objectives

Game-enhanced and game-based learning and teaching (Reinhardt & Sykes, 2012, p. 33)



Functions and intended objectives



Elements identified by the children (Butler, 2015, 2017)

Motivational elements

1. Clear rules
2. Goals and objectives
3. Outcome and feedback (instant feedback, applause, recording, feeling achieved)
4. Competition
5. Obstacles
6. Collaboration
7. Challenge (staging, risks)
8. Control
9. Interaction
10. Sound and visual effects
11. Speed and time limitation
12. Fantasy and unreality
13. Stories
14. Repetition and recovery
15. Convenience (playing anywhere and any time)
16. Relaxing, stress-releasing

CBIGs for voc. learning

Learning elements

1. Repetition, imitation, and reviewing (*Rehearsal strategies*)
2. Imaging and making stories (*Encoding/ memory strategies*)
3. Grouping similar words (*Encoding/ memory strategies*)
4. Association with known words and parts (*Encoding/ memory strategies*)
5. Using multiple modalities and methods (*Encoding/ memory strategies*)
6. Learning and using with other people (*social strategies*)
7. Choosing to learn from the most useful and/or interesting words (*metacognitive strategies*)
8. Controlling own learning (e.g., choosing own difficulty levels) (*metacognitive strategies*)

- Games vary
  - in terms of motivational and learning elements (some elements are intentionally embedded in game designs, while others are not)
- Children vary
  - In their use of these elements/functions when playing games

How are functions are used - varied

- Different perceptions and uses of functions
  - Cultural differences (e.g., competition)
  - Individual differences
- Language(s) used during interaction
  - The use of the target language and multiple languages
  - The amount and the quality of input and output
- Interaction taken place
  - Egalitarian relationships among players (can be more active)
  - Novices vs. experts (teaching others helps one's own learning)
  - Misunderstanding and conflicts
- Combined use of other devices
  - Machine translation
- Information gathering
  - Reading reviews, tutorial videos, asking others for help

Complexity 3

How to define ‘outcomes’

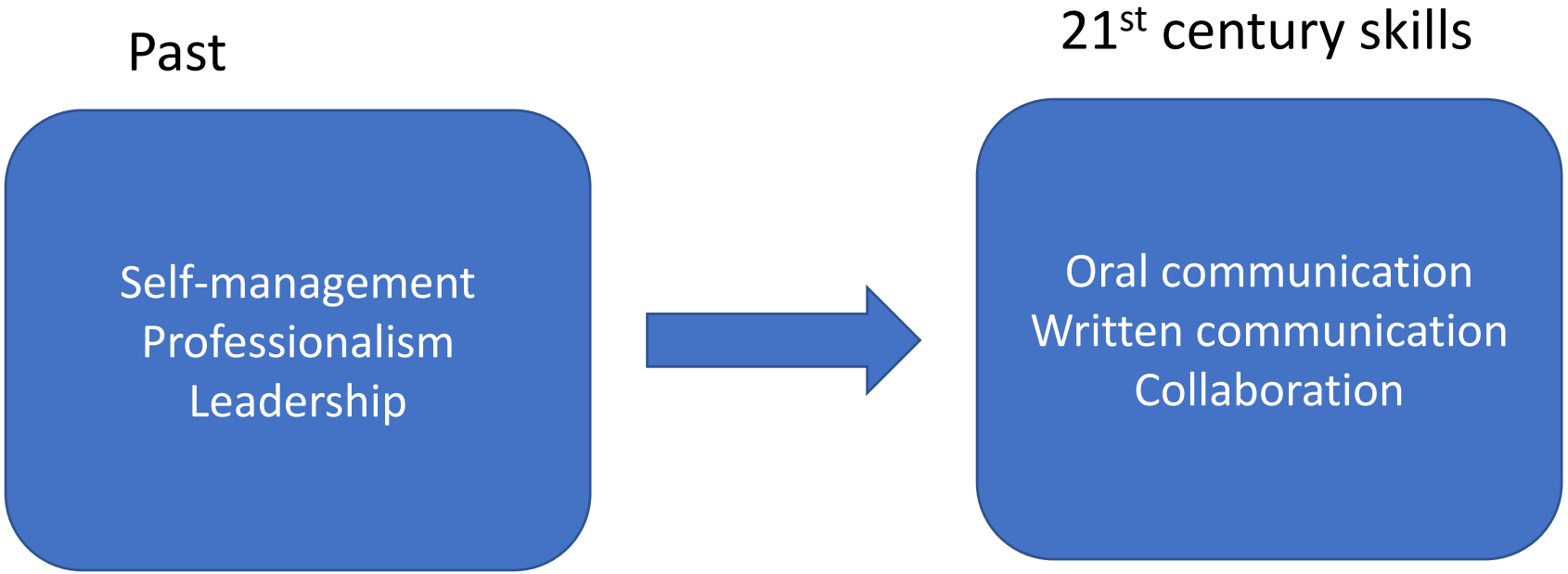
“Outcomes”

- Linguistic gains
  - Not just vocabulary
  - Grammar
  - Age differences in the effects on oral and written language
  - “Digital pragmatics”
  - Multilingual learning
- Non-linguistic gains
  - Creativity
  - Problem-solving
  - Critical thinking
  - Skills to use various resources to be strategic
  - Self-confidence
  - Intercultural awareness/ competence
  - Collaborative learning; friendship building, etc.

Critical skills for the workplace

(based on 140,000 job advertisements, Rios et al., 2020)

- Abilities that companies look for



Complexity 4

How to interpret children’s perceptions

Children's voices are valuable, but…

- **What we learned from children's voices**
  - Adults tend to focus on immediate benefits – children address long-term and broader benefits
  - Children are self-aware of pros and cons of game-playing
  - A lack of sufficient rewards and acknowledgement at school
- **What cannot be sure from children's voices in the project**
  - Voices from non-game players
  - Players who have conflict with family game-playing policies
- **Caution for the interpretation**
  - Power relations
  - Potentially different responses depending on the researcher's positioning (e.g., a fellow game player, a total novice, etc.)
  - Gaps in understanding of survey and interview questions between children and researchers

Complexity 5

How to contextualize children's game-playing in rapidly and dynamically changing environments.

Driving force of changes

- Covid 19
- Globalization
  - Multilingualism
  - Gaps by SES/ social class
- Policy changes
  - School policies
  - Educational policies (e.g., China's Double Reduction Policy)
- Parental and societal perceptional changes in the role of digital games in children's learning
- Advancement of digital technology (including AI)

Complexities

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Suggestions for research

- Pay closer attention to various contextual factors
- Need to better understand the interaction (not only through language(s) but also non-verbal means) during the game-playing
  - Multimodal resource use
  - Use of other devices (e.g., machine translation, etc.)
  - Digital pragmatics
- Have a broader definition of English learning “outcomes”
  - Reconceptualization of “language competence”
- Have greater considerations on ethics when studying children’s game-playing
  - Consents from other players?
  - The role of AIs? – contribute addiction?

Take-home message

Acknowledge the complexity of learning in the wild

Thank you for your attention

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