
Article:
Chen, X., Lin, A. and Webber, S. orcid.org/0000-0002-2280-9519 (2025) "We do not always enjoy surprises": investigating artificial serendipity in an online marketplace context. Journal of Documentation, 81 (2). ISSN 0022-0418

https://doi.org/10.1108/JD-01-2024-0011

“We do not always enjoy surprises”: Investigating artificial serendipity in an online marketplace context

Abstract

Purpose – This study aims to gain a better understanding of **artificial serendipity – pre-planned surprises intentionally crafted through deliberate designs** – in online marketplaces. By exploring the key features of artificial serendipity, this study investigates whether serendipity can be intentionally designed, particularly with the use of artificial intelligence (AI). The findings from this research broaden the scope of serendipity studies, making them more relevant and applicable in the context of the AI era.

Design/methodology/approach – A narrative study was conducted, gathering insights from 32 Chinese online consumers through diaries and interviews. The data were analysed in close collaboration with participants, ensuring an authentic reflection of their perceptions regarding the features of artificial serendipity in online marketplaces.

Findings – Findings reveal that artificial serendipity, particularly when designed by AI, is still regarded by online consumers as genuine serendipity. It provides a sense of real surprise and encourages deeper reflection on personal knowledge, affording the two central qualities of genuine serendipity: unexpectedness and valuableness. However, since artificial serendipity are pre-planned through intentional design, consumers cannot have entire control over it. Therefore, compared to natural serendipity – fortune surprises arising from accidental correspondence between individuals and contexts – artificial serendipity tends to be more surprising yet less valuable.

Originality/value – This study stands out as one of the few to provide a nuanced understanding of artificial serendipity, offering valuable insights for both research and practice. For research, it highlights the potential of intelligent technologies to facilitate genuine serendipity, updating our understanding of serendipity. Also, the study provides practical insights into designing serendipity, especially in online markets. These contributions enrich both the theoretical framework and practical strategies surrounding serendipity in the era of AI.

Keywords Serendipity, Information behaviour, Consumer behaviour, E-commerce, Information Science, Human-Computer Interaction

Paper type Research paper

1 Introduction

For e-commerce practitioners, creating enjoyable customer experiences is a top priority (Bleier *et al*., 2019), as it often increases the likelihood of purchases and boosts consumer satisfaction (Grewal *et al*., 2009). With feelings of luck and surprise capable of boosting customer enjoyment, e-commerce practitioners are increasingly recognising the appeal of serendipity, namely, the experience of a fortune surprise (Kim *et al*., 2021). Many e-commerce practitioners, such as Amazon and AliExpress, are actively working to create serendipitous experiences within their platforms (Kim *et al*., 2021; Reviglio, 2023), with most now relying on the power of artificial intelligence (AI) (Oh *et al*., 2022; Wang *et al*., 2023). These design efforts have reignited research focus on **artificial serendipity – pre-planned surprises intentionally crafted through deliberate designs** (Chen *et al*., 2024; de Melo, 2018), especially about whether such surprises can be genuinely serendipitous.

In most literature, serendipity is considered an accidental yet fortune correspondence between an individual and a context (Björneborn, 2017; Makri and Blandford, 2012a). To be recognised as genuine serendipity, an experience needs to be unexpected yet bring some form of value to the experiencer (Makri and Blandford, 2012b). However, in the case of artificial serendipity, especially one triggered by AI, both unexpectedness and value may be compromised. Surprises generated by AI tend to be constrained by consumers’ digital footprints, limiting their overall scope (Schmidt, 2021). As consumers become more familiar with the AI systems, they may start to anticipate the surprises, which can reduce the sense of unexpectedness these surprises are meant to bring (Makri *et al*., 2014). Since these surprises are orchestrated by AI rather than arising from the consumers’ spontaneous choices, they may also lack personal significance for consumers and, as a result, offer limited value (Erdelez and Jahnke, 2018; Schmidt, 2021).

Despite the doubts about whether artificial serendipity can truly be considered genuine serendipity, research addressing these concerns is limited. This lack of investigation is particularly concerning, as there is an ever-growing call for AI-powered designs for serendipity (Smets, 2023). If these doubts remain unresolved, they may hinder the development of effective serendipity-design strategies. To address these doubts around artificial serendipity, we

decided to learn directly from online consumers. As both unexpectedness and valuableness are subjective feelings, only its experiencers – i.e. the serendipitists (van Andel, 1994) – can ultimately define what constitutes genuine serendipity (Björneborn, 2017; Smets, 2023).

By directly learning from consumers, this paper intends to answer the research question:

- *How do online consumers perceive artificial serendipity in online marketplaces?*

In answering this research question, we aim to achieve two main objectives: (1) to identify the characteristics of artificial serendipity, particularly those triggered by AI-powered agents in online marketplaces, and (2) to explore the differences between artificial serendipity and natural serendipity and **natural serendipity – the fortune surprises arising from accidental correspondence between individuals and context** (Björneborn, 2017; de Melo, 2018). Achieving these objectives will provide a deeper understanding of the designability of serendipity, particularly in the context of AI-powered technologies, and better align serendipity-related studies with the AI era.

This article is organised into six sections. Section 2 provides a short review of the literature on serendipity, Section 3 discusses the methodology of this study, and Section 4 presents the research findings. Section 5 discusses the theoretical contributions and practical implications of this research. Lastly, Section 6 concludes.

2 Literature review

This study draws on insights from three central disciplines: information science, consumer behaviour and human-computer interaction (HCI). Information science provides a theoretical lens for understanding natural and artificial serendipity, while consumer behaviour studies and HCI clarify how artificial serendipity is intentionally facilitated in online marketplaces.

2.1 Nature and condition of serendipity

Walpole initially coined the term "serendipity", which signifies a beneficial discovery triggered by accident and sagacity (McBirnie, 2008; McCay-Peet and Toms, 2017).

> "[...] always making discoveries, by accidents and sagacity, of things which they were not in quest of [...] This discovery, indeed, is almost of that kind which I call Serendipity [...]". (Walpole, 1754, as cited in Foster and Ellis, 2014)

Building on Walpole's definition, a common view in existing literature is of serendipity as the interplay of three core characteristics: unexpectedness, valuableness and sagacity (Busch, 2022; Makri and Blandford, 2012a, 2012b). Among these three characteristics, unexpectedness and valuableness are especially significant (Grange *et al*., 2018; Maloney and Conrad, 2016).

The core of serendipity is unexpectedness (Rubin *et al*., 2011; Smets, 2023). For serendipitists, serendipity is a lucky surprise beyond their anticipations (Erdelez, 1997; Jiang *et al*., 2015). Serendipity strikes when serendipitists, focusing on unrelated foreground activities (Erdelez, 1999; Jiang *et al*., 2015), become simulated by surprising triggers. These triggers attract serendipitists through the way they appear and/or the content they carry (Foster and Ford, 2003), which sparking serendipitists' curiosity about the unknown (Makri and Blandford, 2012b) and providing a hint of value fosters a sense of luck within the serendipitists (Kim *et al*., 2021), compelling them to shift their attention to the unexpected happening.

When serendipitists delve deeper into unexpected routes, they can often reach a valuable end (Makri *et al*., 2014). The value can be intangible, evoking emotional enjoyment or rekindling fond memories (Erdelez, 1999; McCay-Peet and Toms, 2015). Alternatively, the value can be tangible, sparking innovative thoughts, indicating new developmental avenues, or offering clear answers to persistent questions (Busch, 2022; Liu *et al*., 2021).

Transforming unexpected happenings into valuable outcomes hinges on the sagacity of the serendipitists. Sagacity revolves around mental readiness to welcome the unforeseen (Cunha *et al*., 2015; Heinström, 2006) and intellectual preparedness to act on sudden discoveries (Copeland, 2017; Lutz *et al*., 2017). Without a receptive mindset, serendipitists may bypass serendipitous opportunities (Busch, 2022), discarding valuable unexpected findings as mere distractions (McCay-Peet and Toms, 2015).

Serendipity is evident in the interplay of contextual occurrences and serendipitists' reflections. This intricacy underscores the subjectiveness and contextual dependence of serendipity.

2.2 Artificial serendipity and the debate around it

Recognising the value of serendipity has sparked interests in intentionally creating it to make fortunate encounters more frequent (Makri *et al*., 2014). These interests, in turn, have led to the rise of **artificial serendipity, namely, pre-planned surprises intentionally crafted through deliberate designs** (Chen *et al*., 2024; de Melo, 2018).

Attempts to facilitate artificial serendipity initially started in physical environments. Successful examples include the workplace designs of Silicon Valley companies such as Google, where traditional divisions were intentionally removed to encourage interdisciplinary interactions and increase the likelihood of engineers encountering new ideas (Agnihotri and Bhattacharya, 2022). Another effective serendipity-prone design is the semantic arrangement of library shelves, which helps users to discover useful information from unfamiliar sources (Waugh *et al*., 2017). All successful attempts led to the proposal of three key contextual affordances for serendipity (Björneborn, 2017), guiding the nurturing of artificial serendipity. These affordances include: (1) diversifiability – providing a diverse range of resources to increase the likelihood of individuals encountering surprises, (2) sensoriability – ensuring the designed surprises are noticeable and relevant in attracting individuals' attention and interest, (3) traversability – delivering designed surprises in an accessible and understandable manner, allowing individuals to fully explore and realise the value of thes surprises.

Informed by the identified affordances, designers have started exploring ways to foster artificial serendipity in digital environments, particularly in online marketplaces (André *et al*., 2009; Reviglio, 2019). To incorporate these affordances, three key strategies are employed: (1) Recommendation systems (RSs) are optimised by introducing more novel and unexpected items, moving beyond accuracy-based algorithms to increase diversity and enhance the diversifiability of the online marketplaces (Fu *et al*., 2023; Wang *et al*., 2023). (2) Interface designs are streamlined to ensure users can effortlessly navigate through a wide range of information without missing the highlighted surprises, thereby enhancing the sensoriability of the online marketplaces (Jannach *et al*., 2021; Niu *et al*., 2021). (3) Decision-support tools, such as visualisation and social tools, are provided to help users quickly recognise how surprises connect to their existing knowledge or interests (Grange *et al*., 2018; Oh *et al*., 2022). This strategy encourages deeper engagement with the designed surprises and improves the traversability of the online marketplaces.

With the advent of AI, strategies for designing artificial serendipity in digital environments have been further enhanced. AI-powered RSs, trained on large language models, excel at understanding complex consumer-item relationships, enabling the delivery of more appealing surprises to engage consumers (Fu *et al*., 2023). Besides, with AI bots, consumer-interface interactions have become more natural and engaging (Li *et al*., 2024), affording consumers more opportunities to bump into and explore the identified surprises. Given all these potential benefits, retail giants such as Amazon and AliExpress are increasingly incorporating AI into their platform designs to enhance artificial serendipity (Reviglio, 2023).

Despite this trend, leveraging AI to foster artificial serendipity has sparked debate. The central issue is whether these AI-powered artificial serendipity can indeed qualify as genuine serendipity. This scepticism arises from two concerns: first, whether AI algorithms can afford consistent unexpectedness; and second, whether serendipitists can still benefit when their experiences are influenced and even shaped by the designers' intentions.

An authentic sense of unexpectedness arises from spontaneous and unregulated events, ever-elusive and perpetually refreshing (McCay-Peet and Toms, 2011; Schmidt, 2021). By contrast, the surprises afforded by AI are algorithmically moulded, often constrained by the serendipitists' digital footprints and having a limited scope (Erdelez *et al*., 2019; Krotoski, 2011). Accordingly, consumers can gradually learn and become more familiar with these pre-planned surprises. While these surprises may initially appear novel, their charm may be fleeting (Erdelez *et al*., 2019). With time, their patterns become predictable, diminishing the initial sense of being refreshing and novel (Erdelez and Jahnke, 2018; Lutz *et al*., 2017). In essence, these designed surprises offer but an illusion of genuine unexpectedness (Erdelez *et al*., 2019). Given this, AI-powered artificial serendipity does not deserve the serendipity label.

Furthermore, no AI system is neutral; rather, they reflect the priorities of their designers (often e-commerce practitioners) (Smert, 2023). AI systems are crafted according to the designers' understanding of serendipity and their personal interests (Boo *et al*., 2023). In this context, the value for serendipitists, namely the consumers, can be compromised. Essentially, e-commerce practitioners and consumers are on opposite sides of the market (Krotoski, 2011). E-commerce practitioners facilitate serendipity primarily to boost their business profits (Kim *et al*., 2021). Some even regard artificial serendipity as a strategy to trigger impulsive purchases (Bao and Yang, 2022), disregarding the value that consumers, as serendipitists, should derive. Even when some e-commerce practitioners consider consumers in the design of artificial serendipity, the value provided to consumers may still be limited, as

consumers are rarely included in the design process to inform designers about what they truly value (Wang *et al*., 2020). When the value for serendipitists is absent, AI-powered artificial serendipity becomes indistinguishable from ordinary chance events and does not merit the label of serendipity.

To address the controversy surrounding AI-powered artificial serendipity, it is essential to directly consult consumers immersed in contemporary online marketplaces (Chen *et al*., 2019; Reviglio, 2017). The most insightful understanding of any subjective experience comes from those who live it (Makri *et al*., 2014). However, there is a surprising lack of research exploring the viewpoints of online consumers on this topic, resulting in a significant gap. To bridge this gap, this study focuses on a serendipitist-centric perspective, gaining insights into the features and distinctiveness of artificial serendipity directly from online consumers' real-life experiences.

3 Methods

3.1 Research strategy and participants

A narrative approach was adopted as the research strategy, grounding the research in stories told by the participants. Since storytelling is a natural human skill (Eckerdal, 2013), it enables participants to express their ideas with minimal researcher interference (Bronstein, 2019). This high degree of expression autonomy grants participants the agency to express themselves more freely (Eckerdal, 2013), fostering a more intricate and nuanced portrayal of their experiences and thoughts (Bronstein, 2019; Riessman, 1993).

Participants for this research were Chinese individuals aged between 18 and 34, selected for two main reasons: (1) This age group constitutes the greatest online consumption power worldwide (Statista, 2020), with richer online marketplace visits and more diverse insights to offer. (2) A shared cultural background could facilitate a better understanding between the researchers and participants (Riessman, 1993), ensuring that the stories told by participants can be interpreted with minimal distortion of their intended meanings (Du, 2023).

Ethical approval for this research was granted by the researchers' institution (reference number 037495). Thirty-two participants (25 females and 7 males) from four distinct age groups[1] (18-19, 20-24, 25-29, 30-32) were recruited, contributing 123 serendipitous stories.

3.2 Research process

Figure 3.1 illustrates the research process, which was validated through a pilot study. The process involved three stages: telling, analysing and interpreting, and re-telling.

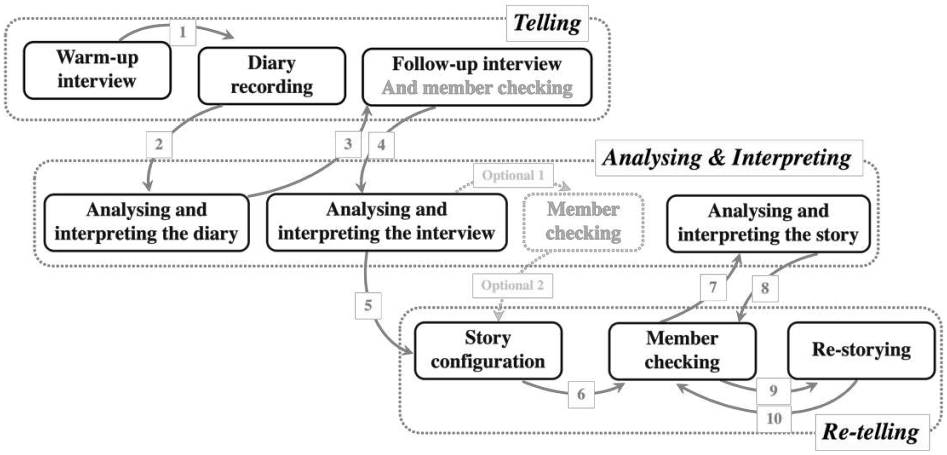

Figure 3.1. The research process

figure by authors

3.2.1 Telling

At the telling stage, stories about participants' experience and perceptions of artificial serendipity were captured through self-administered diaries and semi-structured interviews. Diaries can offset the fallibility of memory (Ritchie *et al*., 2013), being effective in recording the nuances of participants' experiences – a benefit proved in serendipity-

[1] The division of age groups was based on indicators specified by the population census standards in China (National Bureau of Statistics of China, 2010).

focused studies (e.g. Jiang *et al*., 2019; Sun *et al*., 2011; Zhou *et al*., 2018). Interviews, as intimate in-person conversations (Foster and Ford, 2003), allow for a deeper exploration of inner thoughts that may be difficult to express in writing (Bryman, 2016). By combining these two methods, an in-detailed understanding of artificial serendipity can be gained.

Diaries and interviews were used alternately in two sessions: First, a warm-up session, led by a semi-structured interview. In this session, participants were first informed the research purpose and their recording autonomy. Next, they were encouraged to share their personal interpretations of serendipity and artificial serendipity in a causal chat guided by five open-ended questions:

- How would you interpret serendipity in your everyday lives?
- What are some memorable serendipitous events that have happened to you in your everyday lives?
- How would you interpret serendipity in your online shopping?
- What are some memorable serendipitous events that have happened to you during online shopping?
- How did your serendipitous experience while shopping online differ from serendipity on other occasions?

To enable participants to express their thoughts about artificial serendipity freely, no academic definition of serendipity and artificial serendipity were provided, mirroring studies of Makri and Blandford (2012b) and Borger and Björneborn (2013). Also, any interesting topics that emerged beyond the planned questions were explored during the warm-up interviews.

Second, the diary-and-interview session, lasting one month, involved both diary entries and interviews. In this session, participants were encouraged to recording four diaries of artificial serendipity; yet, given the unpredictable nature of serendipity, this quota worked more as a flexible recording prompt rather than a strict requirement[1]. Also, to maintain participants' recording autonomy, no fixed recording template was required to be followed. Instead, participants were encouraged to detail their experiences in their own style while ensuring they noted the following issues:

- How did the recorded experience unfold? Please delineate the beginning, middle, and end of the experience, and highlight the important turning points in the experience.
- How did you feel and behave during the experience? Please clarify your emotions, behaviours and thoughts.
- Who or what also played a role in shaping this experience? Please describe their influence.

Once diaries were recorded, they should be sent to researchers for immediate analysis, results of which then informed the follow-up interviews centred around three main groups of open-ended questions: (1) questions to clarify any ambiguities in the recordings, such as unexplained changes in behaviour or emotion; (2) questions to explore any further developments related to the recorded experiences; (3) questions to delve into participants' perceptions and interpretations of the key aspects of their experiences. These central questions, together with any additional ones that emerged during the interviews, led to a holistic depiction of the process and features of artificial serendipity.

The telling stage took place from early April to late October 2021. During this stage, participants were further divided into six subgroups, with a maximum of six participants in each – this was to ensure an in-depth researcher-participants engagement, and the number was determined through a pilot study. Participants were encouraged to join the subgroup that best suited their schedule. Also, given the influence of COVID-19, all participant–research communication was performed via real-time chat over WeChat, whose affordance was proved in both the pilot study and the research conducted by Zhou *et al*. (2018).

3.2.2 Analysing and interpreting

Analysing and interpreting stage is woven throughout this research, focusing on elaborating the meaning of three datasets: the diaries, the interviews and the stories constructed based on diaries and interviews. To ensure participants' viewpoints were preserved, member-checking was conducted throughout the analysis and interpretation session.

The analysis and interpretation of diaries was conducted shortly after the diaries were received, with the aim of identifying ambiguities that needed clarification to develop effective follow-up interview questions. To effectively locate the ambiguities, the timeline within each story was carefully examined, as the essence of stories is often conveyed chronologically (Jovchelovitch and Bauer, 2000). To trace the timeline, particular attention was given to the following clues: (1) Chronological indicators following Chinese grammar conventions, such as conjunctions (e.g. later on, after, suddenly) and time-related nouns (e.g. tonight, this moment). (2) Expressions of thought processes,

[1] At the end of the telling stage, 22 participants submitted four diaries, 9 participants submitted fewer than four diaries, and 1 participant submitted a notably high number of 16 diaries.

like ‘I thought’ or ‘I changed my mind,’ as changes in thoughts often signal shifts in time (Carroll, 2007). (3) The sequence of sentences, as participants were encouraged to structure their diaries with a clear beginning, middle, and end. Graphic notes were also taken to facilitate this examination.

Interviews were analysed and interpreted for two reasons: first, to supplement the diary entries and create comprehensive narratives of how artificial serendipity unfolds; and second, to explore participants’ perceptions of artificial serendipity, particularly compared to natural serendipity – **this part of the findings made up the core of this paper**. To achieve these objectives, interview transcripts were categorised into two types: experience-near ones that directly related to the diary entries, and experience-distant ones that point out participants’ broader reflections (Burman, 2003). This distinction was made through a detailed line-by-line reading, focusing on three elements: (1) interview questions indicating relevance to the diary; (2) phrases that indicate recollection, like “I remember in this case”, showing participants were recounting diary experiences; and (3) expressions such as “I need to explain that”, indicating that additional details were being provided.

The analysis and interpretation of the stories centred on understanding their plots (i.e. their consequential structure), shedding light on core stages that made up participants’ artificial serendipitous experience and the factors influencing it. To achieve this objective, each story was first scrutinised for intrapersonal, interpersonal, and contextual elements (Fraser, 2004; Riessman, 1993), which are critical in shaping serendipity. This involved multiple readings, paying close attention to subjects, pronouns, verbs, and phrases that indicated emotions and thoughts (e.g. ‘I am super happy’), as well as expressions reflecting cultural norms (Fraser, 2004). Following this, the logical connections between these elements were explored to understand how they interact. The stories were re-read line by line, beginning with the denouement, as the full scope of experiences often becomes clearer when the outcomes are known (Kim, 2015). Graphic notes were taken throughout the process to help visualise the interactions and relationships identified.

3.2.3 Re-telling

Re-telling aimed to translate the stories told by the participants into more explicitly understandable forms (Fraser, 2004), offering holistic pictures of how artificial serendipity unfolds. Two core tasks in this stage were story configuration and re-storying.

Story configuration focused on creating comprehensive stories with rich details to fully depict how artificial serendipity unfolded. This involved integrating experience-near data from the interviews with the corresponding diaries. Meanwhile, experience-distant data were compiled into a personal profile for each participant, capturing their characteristics, lifestyle, shopping preferences, shopping experiences, and professional identities. These profiles served as a reference for later interpreting what influenced participants’ experiences of artificial serendipity. To ensure reliability, the reconfigured stories and personal profiles were then returned to participants for member-checking, allowing them to refine any misinterpretations. Participants were also encouraged to add any new details they recalled about the narrated experience, further enriching the reconfigured stories.

The purpose of re-storying was to identify commonalities and differences across participants’ stories in crafting academic narratives about artificial serendipity (Fraser, 2004). This approach ensured that the study does not become merely a compilation of overly personalised anecdotes (Riessman, 2003). To achieve this, each story was initially summarised based on its identified plot (Fraser, 2004). These summaries were then compared across stories to pinpoint shared serendipitous patterns among participants. By drawing on these recurrent patterns, prevalent actions, emotions, scenes, and influences were reconnected to create a framework that authentically depicted the artificial serendipity experienced by participants.

3.3 Reliability and fidelity

Reliability and fidelity are vital for ensuring the quality of narrative studies (Blumenfeld-Jones, 1995; Riessman, 2002). A robust narrative study should demonstrate internal consistency, integrity and authentically represent participants’ voices (Blumenfeld-Jones, 1995). To ensure the reliability and fidelity of this study, researchers first reflected on their interpretations of serendipity and artificial serendipity, consciously avoiding influencing participants with these views during the study. Also, research materials and processes were co-designed with participants in a pilot study, ensuring the study effectively addressed the research question while maintaining participants’ autonomy in storytelling. Besides, member-checking was used throughout to confirm that the analysis faithfully represented participants’ experiences. Finally, thick descriptions were also documented to provide a comprehensive understanding of the context and ensure the study’s depth and credibility.

4 Findings

The findings are organised into four sub-sections. The first subsection gives an overview of participants' perceptions of artificial serendipity in online marketplaces. The next three subsections delve into the features of artificial serendipity, addressing the two main debates highlighted in Section 2.2.

4.1 Overview of artificial serendipity

Participants described artificial serendipity as a "thrilling yet voluntary" adventure (P2-9[1]), resembling a "roller-coaster ride" (P2-9). This mix of "the excitement of discovery and the risk of manipulation" (P2-9) gave artificial serendipity a significant place in participants' everyday lives, comparable to natural serendipity, as stated by P3-4:

> **P3-4 I4[2]** – While [artificial serendipity] may not always deliver positive outcomes, it creates lasting memories. I believe that these memories, whether good or bad, leave something significant in our lives. They can serve as reminders to avoid similar pitfalls or draw my attention to things I have neglected. So, I do not think the involvement of AI makes [artificial serendipity] any less important than [natural serendipity].

In this ride, AI-powered RSs played an important role, "controlling the process of [artificial serendipity] together with [participants]" (P2-9). These RSs steered participants towards items "lying at the boundary of [their] usual shopping scope" (P3-6), in turn, reminding participants the existence of "a series of good surprises" (P3-6). However, since these RSs "cater to the vendors' interest most" (P3-6), the good surprises they recommended did not always result in pure benefits or unfiltered satisfaction for participants. Sometimes, the AI-recommended surprises led participants into commercial traps, nudging them to compromise their personal interests.

Overall, from the participants' perspective, the involvement of AI agents did not fundamentally distinguish artificial serendipity from natural serendipity. However, the inclusion of these AI agents gave artificial serendipity distinct qualities, namely, increased unexpectedness, diminished valuableness, and greater opportunities for reflection.

4.2 Increased unexpectedness

Delving into the stories, it is evident that participants were fully aware that their serendipitous experiences were deliberately engineered by e-commerce practitioners using "intelligent technologies" (P3-10), especially AI-powered RSs. In their stories, participants often referred to artificial serendipity as "encounters facilitated by AI" (P4-2) and "encounters supported by algorithms" (P3-3).

Being aware of the intentional design behind their serendipitous experiences did not diminish the participants perceived unexpectedness from artificial serendipity. Instead, participants felt that artificial serendipity afforded more moments of "genuine surprises" (P3-3). Trained by "advanced machine learning techniques" (P4-6), AI agents are endowed with their "own independent thinking autonomy" (P3-10), thus, can "interrupt [participants'] behavioural flow at any moments" (P3-10). For participants, these disruptions to "existing behavioural flow can often result in stronger feeling of unexpectedness" (P3-10).

Also, with their "exceptional data mining and analysis capabilities" (P3-8), AI agents can "understand [participants] as well as [the participants] understand [themselves], while also possessing an even greater knowledge of market information than [the participants]" (P3-8). Thus, for participants, the unplanned items these agents suggested were often considered as "hidden treasures" (P4-5), which can be easily "noticed and fascinate [them]" (P4-5), leading to moments of "good surprises" (P3-8). Given the deep involvement of AI agents in artificial serendipity, these good surprises can occur multiple times within a single experience. For instance, P3-6 recounted being fascinated by over thirty beautiful hairpins she had never seen before during one artificial serendipity experience; similarly, P4-4 recalled discovering a series of newly released summer outfits that perfectly matched her tastes during a single serendipity.

Given its affordance for continued pleasant surprises, participants even began to look forward to artificial serendipity. Over half of the participants even intentionally visited online marketplaces expecting for bumping into such experience, as stated by P4-5.

> **P4-5 I2 –** I really feel that AI algorithms and big data applications have truly made Taobao more prone to surprising occurrences. It feels like Taobao[3] has indeed become what its name suggests – a treasure trove. Even if I casually open

[1] P2-9 refers to the ninth participant from the second age group; subsequent participant references adhere to this naming convention.
[2] P3-4 I4 refers to the fourth interview with the fourth participant from the third age group; subsequent participant references adhere to this naming convention.
[3] Taobao (淘宝) is a major Chinese e-commerce platform, owned by Alibaba, renowned for its extensive assortment of products for sales.

> Taobao, there always seems to be something interesting that pops up. So, sometimes, even if I have nothing specific to buy, I would intentionally open Taobao just to see what surprises it has in store for me.

Interestingly, even with explicit expectations, participants could still be genuinely surprised and experience unexpected feelings when artificial serendipity occurred. As non-AI experts, they may "never fully understand the complicated AI algorithms" (P1-1), and, therefore, may never fully predict when and where the AI agents would deliver their selected items.

> **P3-9 I3 –** An individual's analytical and cognitive capability could hardly compete with the computing power of sophisticated artificial intelligence. After all, behind this artificial intelligence is the collective of vast scientific elites. AI is much smarter than us.

Participants' "ignorance about AI" (P1-1) maintained a level of unpredictability in participants' encounters with AI-selected items, making each instance of artificial serendipity "genuinely surprising and unexpected" (P2-9).

4.3 Diminished valuableness

Despite affording a sense of unexpectedness as natural serendipity, artificial serendipity does not always afford the same level of valuableness. Roots for such a declined valuableness are twofold: First, the involvement of e-commerce practitioners. As designers for the AI agents, e-commerce practitioners can "discreetly and deeply intervene in [artificial serendipity]" (P4-2). This involvement allows practitioners to steer participants' serendipitous experiences to favour their commercial profitability rather than benefit the participants, as suggested by P3-9.

> **P3-9 I3 –** So, with the adoption of AI, platforms and vendors can more precisely determine when and how to intervene in our actions to maximise their benefits. Essentially, AI grants vendors and platforms an enhanced opportunity to manipulate all our in-store experiences, including serendipity.

The second cause is the increased uncertainty brought by novel items. AI agents, with their "powerful analytical and computational capabilities" (P3-8), can bring participants surprises that are "far more novel than what [participants] could discover independently" (P3-8). While novelty can be exciting, it can also be overwhelming, as assessing these novel items often requires "significant time and effort" (P3-8). Worse still, due to a lack of "background knowledge" (P3-8), participants may struggle to accurately determine their value, leading to potentially irrational decisions.

Given the aforementioned causes, participants perceived artificial serendipity as "an adventure" (P2-9), with the potential to direct them into risky situations that undermine their personal benefits. These adverse situations can arise at any stage of the experience, or even after it ends, manifesting as: a dilemma of choice, waste of resources, belated fatigue, regretful purchases, and reduced purchase autonomy.

4.3.1 Dilemma of choice

The adverse situation in the early stage of artificial serendipity often presented as a dilemma of choice – a psychological struggle arising from participants' uncertainty about whether to seize the artificial serendipitous opportunity. On one hand, participants recognised that AI-triggered surprises could potentially be undiscovered treasures, making them inclined to accept these opportunities. On the other hand, the unfamiliarity of the surprising items made participants worried about its potential for being a commercial ploy, as stated by P4-6:

> **P4-6 I4** – Because of the lack of familiarity, it is challenging to notice the flaws in the recommendations immediately. In such a state of ignorance, we might be more likely to act based on our emotions, thinking irrationally and making them relatively impulsive.

Worse still, this psychological struggle can sometimes be compounded by the pressure to make quick decisions, as online information updates rapidly and opportunities may seem fleeting. For instance, P4-3 mentioned that he had once missed the opportunity to explore a newly released shaver he encountered on Douyin[1], as the recommendation disappeared quickly in the "less than 10 seconds" (P4-3) he spent on considering whether to click it or not. This time pressure can, in turn, intensifying participants' perceived anxiety.

Facing such a struggling situation, some participants may choose to abruptly end the artificial serendipity. This abrupt end can result in two outcomes: (1) "a fruitless encounter" (P3-2), gaining nothing from the recommended surprise; (2) being trapped in a state of cognitive entanglement, continuously regretting in not exploring the serendipitous finding. Sometimes, this lingering regret can even impair participants in enjoying other everyday activities. For example, when faced with a dilemma prompted by a newly launched lipstick recommendation, P1-3 decided to play

[1] Douyin (抖音), internationally recognised as TikTok, is a popular short-video social media platform originating from China. As it has evolved, it has become a significant social commerce platform where vendors market their products.

a game instead of exploring the lipstick. However, she kept thinking about the lipstick while playing, which led to her losing the game and having an unpleasant gaming experience.

4.3.2 Waste of resources

As artificial serendipity progresses, participants may find out that experiencing it is a waste of time and effort. Participants may gradually aware that their initial expectation about the experience was "high and unrealistic" (P2-3), being shaped by their own lack of knowledge and the persuasive marketing strategies employed by e-commerce practitioners. For example, after delving into a "popular book recommended by several famous financial advisors" (P2-3) she encountered on Douyin, P2-3 found its content unappealing, feeling she had wasted her time and energy. P3-6 faced a similar situation. After spending nearly half an hour searching for more details about an encountered shirt, she realised it was a valueless knockoff.

Realising that their efforts have been in vain can lead to participants feeling frustrated and even angry, as expressed by P1-4:

> **P1-4 I4** – I easily accept failure when I have no expectations for something. However, if I have high expectations from the beginning, but the outcome turns out to be a failure, I find it hard to accept and even become angry. It feels like I have been deceived and played with, which is quite unsettling.

These negative emotions peaked if participants undertook a planned task with specific goals before the artificial serendipity were encountered. In these cases, the waste of time and energy indicated the loss of a 'should-have-been-gained benefit' (P2-6). In her account, P2-6 missed her lunch, as she spent the entire lunch break checking a list of "useless" discounted products pushed to her by Taobao before the 618 Shopping Festival.

Sometimes, negative emotions could lead to a decrease in trust or even "great disgust" (P2-9) towards the vendors who curated the serendipitous experience. For instance, when P1-2 realised she had been duped by an incredible discount that she could never get, she uninstalled Pinduoduo[1] immediately and did not use it again. A similar story was reported by P4-3, who uninstalled the same shopping app after realising that he spent 30 minutes on a surprising rebate task that only led to some useless Pinduoduo points.

4.3.3 Belated fatigue

Even when participants experienced an enjoyable period of artificial serendipity as expected, they may still be directed to adverse outcomes immediately afterward. Sometimes, participants realised that the enjoyment during the process came at the cost of physical and cognitive fatigue. Seven participants complained that artificial serendipity had led them to pleasant yet prolonged in-store visits, leading to strained eyes, sore wrists, and aesthetic fatigue for certain product groups.

For these participants, the artificial serendipity tended to be "addictive and difficult to end" (P1-4). AI-facilitated RSs guaranteed a continuous supply of interesting stimuli with successively increased attractiveness, inducing participants' desire for "a non-stop exploration" (P3-6). After P3-6 clicked on an encountered hairpin, Taobao continuously recommended more well-designed ones that better catered to her aesthetic preferences. Consequently, her desire to explore was further fuelled, and her stay on Taobao was prolonged.

Similarly, P4-6, a salesperson who "has a [good] understanding of how vendors manipulate consumers" described some artificial serendipities as "emotional opium", giving him the illusion that experiencing them requires little effort but can lead to intense happiness. Under the constant appearance of more enticing discount information, P4-6 spent 30 minutes on Pinduoduo, far exceeding his usual shopping time. It all started with his click on the shopping festival promotion he stumbled upon on Pinduoduo. In P4-6's view, the subsequent discount information gradually pushed him into an "addiction state" (P4-6), making it difficult for him to withdraw from the experience despite the information overload or physical stress he experienced.

The delayed perception of fatigue led some participants to temporary information avoidance, as they needed some "unaffected time to recover" (P2-1). For example, after a five-hour serendipitous adventure on Xiaohongshu[2], P2-1 deliberately stopped the push notifications of all shopping apps for a week. P1-1 stopped using Vipshop[3] for three

---

[1] Pinduoduo (拼多多) is a major Chinese e-commerce platform renowned for its low-price strategy. However, it has been criticised for its poor handling of false information and failure to deliver high-quality products.

[2] Xiaohongshu (小红书) is a major Chinese social media and e-commerce platform, famous for promoting the exchange of shopping experiences among its users.

[3] Vipshop (唯品会) is a major Chinese e-commerce platform, which offers high-quality, popular branded products at a significant discount

days when she realised that the pain in her wrist could be caused by her spending too much time swiping the app the night before.

4.3.4 Regretful purchases

The adverse outcome caused by artificial serendipity can also be tangible, serving as regretful purchases that were impulsive or did not meet participants' expectations.

Impulsive purchases, where participants waste money on products they may never use, often occur when caught up in a "constant feeling of euphoria" (P3-7). In some cases, the experience of artificial serendipity is akin to a trip to a "virtual fairyland" (P3-9). In this fairyland, participants may trust emotions over logic, only seeking positive information about the store and its products while ignoring negative reviews.

> **P3-7 I5** – No one would take the initiative to make an already enjoyable state worse. Instead, we often continue to explore things that can maintain this enjoyable state.

Due to her inclination to trust emotions over logic, P3-7 was enticed to impulsively purchase a lipstick that appeared appealing but turned out to be poor quality. Notably, this emotion-dominated decision-making also occurred with participants who claimed to be rational. In P4-2's story, she encountered a series of indoor decorations on Taobao that perfectly matched her aesthetic taste, offering her a "royal-like enjoyment". As a result, she bought a vase from an unknown brand, even though she had no interest in flower arranging.

Another type of regrettable decision is when the purchasing brings participants results that do not align with their expectations. The core reason behind this expectation-reality gap is the sense of luck sparked by artificial serendipity, as stated by P1-1:

> **P1-1 I3** – Finding exactly what I wanted with no effort did make me feel that I was the chosen one, the luckiest one. Then I start to fantasise that all good things will happen to me, including the idea that if I buy something this time, it must be good.

The feeling of being lucky led participants to attach some illusions to the effectiveness of their serendipitous findings. Consequently, even if the purchase is of good quality, participants may still regret buying it. For example, P4-7 regretted buying a mini adapter because it turned out to be bigger than he had imagined, although the product's quality was excellent and fully met his needs. Nevertheless, P4-7 expressed that he would have been delighted with this purchase if he had discovered this product through his search.

Similar to the reaction to belated fatigue, the realisation of a regrettable decision was also followed by participants' temporary avoidance of consumption information, either because of a "conscious control of consumption expenses" (P1-4) or because the unplanned shopping had already "used up [their] living expenses" (P1-1).

4.3.5 Reduced purchase autonomy

In some cases, dark sides of artificial serendipity take time to become evident. Upon late reflection, participants eventually realised that the pleasant surprises they bumped into were merely "bait" (P2-1) that e-commerce practitioners used to reduce their purchase autonomy.

P2-8 and P2-1 took "the bait" (P2-1) and "experienced the pain" (P2-1). For instance, P2-1 claimed that she had once been stuck on Xiaohongshu for three months, continually browsing and even purchasing "ugly and expensive" items that she would have never looked at before. For P2-8, she felt her information search skills "deteriorated a lot" (P2-8) after embracing artificial serendipity for a prolonged period. The loss of her ability to search was realised when she could not devise a specific search term for a pair of good-looking shoes worn by a colleague.

In short, as claimed by P2-8, some of the artificial serendipities are difficult-to-detect filter bubbles. Once entering such a bubble, participants' preferences could be manipulated without their awareness, thus making them the slaves of serendipity who find it impossible to live without the "wicked aids" (P2-8) of the AI-facilitated RSs.

4.4 Enhanced reflectiveness

Even though artificial serendipity can sometimes lead participants to "bad ends" (P1-3), it still affords "useful key takeaways" (P1-3). For participants, artificial serendipity provided a unique opportunity for reflection, enabling them to critically assess the limitations of their current shopping strategies — whether it involved a narrow range of choices, an overlooked commercial trap, or their underlying impulsiveness.

---

compared to retail price.

P2-5 S1[1] – Although the toy turned out to be disappointing, buying it made me aware of other toy options for my dog, like a ball or even electronic toys. So, encountering this toy actually did expand my choices for future purchases.

P2-2 S3 – This frustrating experience taught me a valuable lesson: so-called "lucky boxes" are basically new marketing scams. I will never buy one again.

P4-6 S3 – Although this was a failed purchase, it was not entirely meaningless. In hindsight, I realised that this experience had a useful point—it made me recognise that I am actually more impulsive than I thought, not as rational as I imagined.

The insights obtained from these less-than-ideal experiences are also often more impactful than those derived from purely successful ones, as "adversity encourages deeper introspection" (P4-2). The discomfort of a bad end can act as a powerful catalyst for change, prompting participants to refine their approach and avoid similar pitfalls in the future. In this way, even a disappointing artificial serendipity can be regarded as "meaningful" (P4-2) in participants' everyday lives.

5 Discussion

By adopting a serendipitist-centric focus, this study is one of the first few works that set out to explore artificial serendipity in online marketplaces, revealing feature of this experience and suggesting avenues for further research.

5.1 Artificial serendipity in online marketplaces

Table 5.1 summarises the characteristics of artificial serendipity alongside a comparison with natural serendipity. From the perspective of serendipitists, artificial serendipity still affords two central qualities of genuine serendipity: the unexpectedness and valuableness. However, compared to natural serendipity, artificial serendipity cannot always bring the same level of value, but can afford increased frequency for bumping into unexpected surprises.

Artificial serendipity (in online marketplace)	Natural serendipity
A thrill ride	An unexpected fortune
Continuous surprises recommended by AI	Rare surprises identified through personal sagacity
Varied ends affording insightful hindsight	Valuable outcomes bringing immediate happiness

Table 5.1 Distinctions between artificial and natural serendipity

In natural serendipity, serendipitists navigate random contexts alone (de Melo, 2018). To uncover attractive surprises amid randomness, serendipitists need to be sagacious and attentive in exploring various occurrences (Cunha *et al.*, 2015). By contrast, in artificial serendipity, serendipitists receive targeted support, often from AI-facilitated agents. These autonomous agents bring attractive unknowns to serendipitists in an ongoing way (Alslaity and Tran, 2021), affording multiple surprising moments within a single instance of artificial serendipity.

However, for serendipitists, an increase in surprises does not always lead to greater value. As in practice, AI agents are fundamentally designed to serve the interests of their designers, rather than the serendipitists (Smets, 2023). Thus, AI-generated surprises can sometimes act as commercial traps, steering serendipitists towards outcomes that compromise their personal interests. In this light, serendipitists do not perceive artificial serendipity as an unexpected fortune, as they might with natural serendipity (Foster and Ford, 2003). Instead, they describe it as a thrill ride, where excitement is intertwined with the risk of loss.

Interestingly, the risk of a negative outcome does not diminish the significance of artificial serendipity for serendipitists. Rather, these potential setbacks are often perceived as valuable learning opportunities, prompting serendipitists to reflect on their decision-making processes and refine their strategies. In other words, for serendipitists, artificial serendipity affords insightful hindsight.

Overall, serendipitists regard artificial serendipity as an adventurous and meaningful experience. This duality – affording both surprising discoveries and insights – aligns closely with the central conditions of serendipity, which traditionally involves the surprising uncovering of meaningful insights (Busch, 2022). Therefore, we argue that artificial serendipity should be recognised as a legitimate form of serendipity. The intentional design, often facilitated by AI, adds a new layer of complexity and dynamics to the experience.

[1] P2-5 S1 refers to the first story told by the 5th participant from the second age group; subsequent participant references adhere to this naming convention.

5.2 Reconsidering the designability of serendipity

Exploring the features of artificial serendipity also prompts a deeper reflection on the designability of serendipity – a controversial topic within the field of information science. Notably, our findings suggest that by leveraging the power of AI systems, intentional design can enable serendipity by fulfilling two of its key elements: unexpectedness and valuableness (Maloney and Conrad, 2016), particularly in everyday contexts like online shopping.

Unexpectedness and surprise, at its core, is an emotional response that arises when initial understanding about a context and initial plans are unexpectedly disrupted (Grange *et al*., 2018; Kim *et al*., 2021). In everyday life, we often base our understandings and plans on familiar routines or past pattens (Björneborn, 2023). In this case, by affording the capability for accurately tracking and analysing individuals' online footprints, AI-facilitated agents do have the potential to violate our plans and trigger the moment of unexpectedness and surprise (Niu *et al*., 2021). Also, as neural networks have advanced, AI systems have become black boxes (Alslaity and Tran, 2021), with their inner workings often opaque, even to experts (Von Eschenbach, 2021). This opacity ensures that serendipitists cannot expect when or where AI-triggered surprises will occur, maintaining the genuine sense of unexpectedness.

While the facilitation of surprise by AI systems is relatively straightforward, their contribution to value is more complex and often debated. Some studies argue that AI systems can fundamentally diminish the value of serendipitous experiences (e.g., Erdelez *et al*., 2019; Schmidt, 2021). This is because AI systems are inherently biased, designed to serve the interests of their creators, who often have commercial objectives that conflict with those of the serendipitists (Smert, 2023). Consequently, AI-generated surprises can be manipulative—an observation supported by our participants' experiences. However, our findings also suggest that an immediate setback does not necessarily mean that serendipitists gain nothing from the experience. Value is not always apparent in the short term but can emerge over time (Ertekin, 2018). In hindsight, serendipitists may realise that their initial struggle led to significant insights, sometimes even more profound than those gained from straightforward success (Singh *et al*., 2015). This pattern of a long-term realisation of value is also evident in natural serendipity, as reported by participants in Makri and Blandford's (2012a) research.

Given the above discussions, instead of viewing AI as a destroyer of serendipity, we propose that it should be recognised as a facilitator of a new kind of serendipity – namely, the artificial serendipity. This recognition will enable serendipity researchers to better understand and leverage the potential of AI and other advanced technologies in their studies, thereby enhancing both the practicality and innovativeness of serendipity-related research.

5.3 Implications

Recognising the features of artificial serendipity and reconsidering the designability of serendipity highlight future avenues in serendipity-focused research and designs.

For serendipity-focused research, it is imperative to acknowledge the growing intelligence of contexts. As AI systems increasingly shape our everyday environments (Reviglio, 2019; 2023), the contexts we are embedded in have evolved from passive backdrops into active actor in serendipity. As revealed in this study, AI-powered platforms now actively seek out serendipitous opportunities for participants and influence the follow-up experiences. To advance serendipity research in the AI era, contexts should be placed on an equal intelligence stance with human agents

Also, the timeframe for serendipity-focused research should be extended, as the value of serendipity may take time to become clear. Rushing the research could lead to missed insights and biased conclusions. To fully understand serendipity, especially new type like artificial serendipity, it is essential to allow sufficient time for the value of these experiences to fully emerge and be properly assessed.

Besides avenues for future research, this study also uncovers the key to successful serendipity-prone design: ensuring effective personalisation, as the core elements of serendipity – unexpectedness and valuableness – are subjective and deeply rooted in personal relevance. This strategy is also supported by other experimental studies (e.g., Wang, 2023; Xu *et al*., 2020), which suggest that serendipity, by its very definition, is personalised. Neglecting personalisation and relying solely on novelty in the design for serendipity can be counterproductive. When confronted with unfamiliar items, individuals are more likely to feel confused or anxious rather than pleasantly surprised, leading to disorientation and missed opportunities for meaningful discovery.

5.4 Limitations

This study has its limitations. First, insights were drawn from Chinese online marketplaces. Given the inherent subjectivity and context sensitivity of serendipity, different groups of serendipitists in other contexts may perceive

artificial serendipity differently. Hence, to deepen the understanding about artificial serendipity, we invite further research to investigate this experience across various contexts and among diverse groups of serendipitists, especially the aged groups, whose insights deserves special attention in the era of AI.

Another limitation of this study is our decision not to provide a concrete and detailed definition of serendipity, a choice aligned with scholars who advocate for keeping the concept open-ended (e.g., Makri and Blandford, 2012b; Smets, 2023). While this choice might be criticised for making it difficult to grasp what one is talking about, we still believe it is reasonable. This is because serendipity, by nature, is a fluid concept that should evolve through practical application rather than restricted by rigid definitions (de Melo, 2012). In addition, given the limited discourse on artificial serendipity and the rapid advancement of AI technologies, imposing a strict definition at this stage could hinder future research. Such definition might prevent studies from fully adapting to new AI developments, thereby limiting a deeper understanding of artificial serendipity. Therefore, we suggest that our study be understood as an initial exploration of artificial serendipity and invite further study into this subject.

Finally, with the rapid evolution of technology, more advanced serendipity-focused designs are constantly emerging. We recognise that some of the technical issues raised by our participants may now be less relevant, particularly as newer technologies, such as virtual digital people, were not included in our discussions. Despite this drawback, we believe our study offers valuable insights for information scientists, particularly given the limited exploratory research on artificial serendipity in online marketplaces from a consumer perspective.

6 Conclusion

This study was initiated in response to the growing trend of designing for serendipity in online marketplaces. These deliberate designs have led to the concept of artificial serendipity, where surprises are pre-planned under intentional human designs. However, existing theories fall short in understanding this form of serendipity. To bridge this gap, this study engaged serendipitists (online consumers) to glean their perspectives on the features of artificial serendipity.

Consumers describe artificial serendipity as an adventurous experience, filled with both surprises and insights, but also carrying risks and potential pitfalls. Unlike natural serendipity, which emerges from accidental correspondence between individuals and context, artificial serendipity roots back to AI agents' intentional anticipation and response to consumers' desires. With the active involvement of AI agents, artificial serendipity tends to be more dynamic. It offers more surprising moments, as AI agents can autonomously seek relevant novelties on behalf of consumers. However, these AI-driven surprises can sometimes lead consumers into commercial traps, as these agents are primarily designed to serve their designers' interests, which often conflict with those of consumers. Bumping into commercial trap prompts consumers for a deep to reflection on their shopping strategies, guiding them to refine their approach and avoid similar mistakes in the future. As a result, consumers perceive artificial serendipity as both surprising and meaningful, sharing the same essence as natural serendipity.

Uncovering the features of artificial serendipity offers valuable insights to the ongoing debate about whether serendipity can be intentionally designed. Consumers suggest that both unexpectedness and value – two core conditions of serendipity – can be deliberately influenced, particularly with the help of AI agents. These elements are closely tied to the capacity to understand and expand personal routines and knowledge, areas where AI excels. Specifically, surprise often emerges from the disruption of established patterns, while meaningfulness stems from the enhancement and refinement of personal understanding. By addressing the designability of serendipity, this study also emphasises the importance of personalisation as a key strategy for creating meaningful serendipitous experiences. Effective personalisation ensures that the surprises encountered are relevant and that the value derived from them resonates deeply with the serendipitists.

In future research, we aim to delve deeper into the interactive dynamics between serendipitists and AI agents, providing a more comprehensive understanding of artificial serendipity in online marketplaces. Also, we will broaden the research scope to explore how artificial serendipity manifests in various contexts, particularly with more advanced technologies. By developing a complete picture of artificial serendipity, we hope to better align serendipity-focused studies with the evolving AI era, thereby enhancing their relevance and impact.

References

Agnihotri, A. and Saurabh, B. (2022), *Google's Workplace Design for Serendipity*. SAGE Publications: SAGE Business Cases Originals.

Alslaity, A., and Tran, T. (2021), "Users' responsiveness to persuasive techniques in recommender systems". *Frontiers in artificial intelligence*, *4*, 679459, doi: 10.3389/frai.2021.679459.

André, P. *et al*. (2009), Discovery is never by chance: designing for (un) serendipity. In *Proceedings of the seventh ACM conference on*

Creativity and cognition (pp. 305-314).

Bao, Z., and Yang, J. (2022). "Why online consumers have the urge to buy impulsively: roles of serendipity, trust and flow experience". *Management Decision*, Vol.60 No.12, 3350-3365. doi: 10.1108/MD-07-2021-0900.

Björneborn, L. (2017), "Three key affordances for serendipity: Toward a framework connecting environmental and personal factors in serendipitous encounters". *Journal of documentation*, Vol.73 No.5, pp.1053-1081, doi: 10.1108/JD-07-2016-0097.

Bleier, A., Harmeling, C. M., and Palmatier, R. W. (2019), "Creating effective online customer experiences". *Journal of marketing*, Vol.83 No.2*,* 98-119, doi: 10.1177/0022242918809930

Blumenfeld-Jones, D. (1995), "Fidelity as a criterion for practicing and evaluating narrative inquiry". *International Journal of Qualitative Studies in Education*, Vol. 8 No.1, 25-35, doi: 10.1080/0951839950080104.

Bogers, T., and Björneborn, L. (2013), "Micro-serendipity: Meaningful coincidences in everyday life shared on Twitter", in *Proceedings of the iConference 2013*, Fort Worth, Texas, pp.196-208.

Boo, S., Kim, S., and Lee, S. (2023), "Serendipity into session-based recommendation: Focusing on unexpectedness, relevance, and usefulness of recommendations". In *Companion Proceedings of the 28th International Conference on Intelligent User Interfaces* (pp. 83-86).

Bronstein, J. (2019), "A transitional approach to the study of the information behavior of domestic migrant workers: A narrative inquiry". *Journal of Documentation*, Vol.75 No.2, pp.314-333, doi: 10.1108/JD-07-2018-0112.

Bryman, A. (2016). *Social research methods*. Oxford university press, Oxford.

Burman, E. (2003), "Narratives of'experience'and pedagogical practices". *Narrative Inquiry*, Vol. 13 No.2, doi: 10.1075/ni.13.2.02bur

Busch, C. (2022), "Towards a theory of Serendipity: A systematic review and conceptualization", *Journal of Management Studies* [Preprint], doi: 10.1111/joms.12890.

Carroll, N. (2007), "Narrative closure", *Philosophical Studies*, Vol.135 No.1, pp.1–15, doi: 10.1007/s11098-007-9097-9.

Chen, L. *et al*. (2019), "How serendipity improves user satisfaction with recommendations? a large-scale user evaluation". In *The world wide web conference*, pp.240-250.

Chen, X., Lin, A., and Webber, S. (2024), Designing Artificial Serendipity. In *International Conference on Human-Computer Interaction* (pp. 28-45). Cham: Springer Nature Switzerland.

Copeland, S. (2017), "On serendipity in science: Discovery at the intersection of chance and wisdom", *Synthese*, Vol.196 No.6, pp.2385–2406, doi: 10.1007/s11229-017-1544-3.

Cunha, M. P. *et al.* (2015), "The dialectics of Serendipity", *European Management Journal*, Vol.33 No.1, pp.9–18, doi: 10.1016/j.emj.2014.11.001.

de Melo, R. M. C. (2018), "*On serendipity in the digital medium: Towards a framework for valuable unpredictability in interaction Design*", Universidade do Porto (Portugal).

Du, J. T. (2023), "Understanding the information journeys of late-life migrants to inform support design: Information seeking driven by a major life transition". *Information Processing & Management*, Vol.60 No.2, 103172, doi: /10.1016/j.ipm.2022.103172.

Eckerdal, J. R. (2013), "Empowering Interviews: Narrative Interviews in the Study of Information Literacy in Everyday Life Settings". *Information Research: An International Electronic Journal*, Vol.18 No.3.

Erdelez, S. (1997), "Information encountering: a conceptual framework for accidental information discovery". In *Proceedings of an international conference on Information seeking in context*, pp.412-421.

Erdelez, S. (1999), "Information encountering: It's more than just bumping into information", *Bulletin of the American Society for Information Science and Technology*, Vol.25 No.3, pp.26–29, doi: 10.1002/bult.118.

Erdelez, S., Agarwal, N. K. and Jahnke, I. (2019). Serendipity and critical thinking: fighting disinformation in a socio-technical society. In *ASIS&T SIG Social Informatics Research Symposium, 82nd Annual Meeting of the Association for Information Science and Technology*.

Erdelez, S. and Jahnke, I. (2018), "Personalised systems and illusion of serendipity: A sociotechnical lens", in *Workshop of WEPIR 2018*, New Brunswick, NJ, USA, doi: 10.1145/12345.67890.

Ertekin, N. (2018), "Immediate and long-term benefits of in-store return experience". *Production and Operations Management*, Vol.27 No.1, 121-142, doi: 10.1111/poms.12787

Fraser, H. (2004), "Doing narrative research", *Qualitative Social Work*, 3(2), pp.179–201, doi: 10.1177/1473325004043383.

Foster, A. E. and Ford, N. (2003), "Serendipity and information seeking: An empirical study", *Journal of Documentation*, Vol.59 No.3, pp. 321–340, doi: 10.1108/00220410310472518.

Fu, Z., Niu, X., and Yu, L. (2023), Wisdom of crowds and fine-grained learning for serendipity recommendations. In *Proceedings of the 46th International ACM SIGIR Conference on Research and Development in Information Retrieval* (pp. 739-748).

Grange, C., Benbasat, I. and Burton-Jones, A. (2019), "With a little help from my friends: Cultivating serendipity in online shopping environments", *Information & Management*, Vol.56 No.2, pp. 225–235, doi: 10.1016/j.im.2018.06.001.

Grewal, D., Levy, M., and Kumar, V. (2009). "Customer experience management in retailing: An organizing framework". *Journal of retailing*, Vol.85 *No.*1, 1-14, doi:10.1016/j.jretai.2009.01.001

Heinström, J. (2006), "Psychological factors behind incidental information acquisition", *Library & Information Science Research*, Vol. 28 No.4, pp.579–594, doi:10.1016/j.lisr.2006.03.022.

Jannach, D., Jesse, M., Jugovac, M. and Trattner, C. (2021), "Exploring multi-list user interfaces for similar-item recommendations". In *Proceedings of the 29th ACM Conference on User Modeling, Adaptation and Personalization*, pp.224-228.

Jiang, T., Liu, F., and Chi, Y. (2015), "Online information encountering: modeling the process and influencing factors". *Journal of Documentation*, No.71 Vol. 6, pp. 1135-1157, doi: 10.1108/JD-07-2014-0100.

Jiang, T. *et al.* (2019), "A diary study of information encountering triggered by visual stimuli on micro-blogging services", *Information Processing & Management*, Vol. 56 No.1, pp.29–42, doi: 10.1016/j.ipm.2018.08.005.

Jovchelovitch, S and Bauer, M. W. (2000), "Narrative interviewing". Bauer. M. W and Gaskell. G (Eds.), *Qualitative researching with text, image and sound*, London, England: Sage pp.57–74.

Kim, A. *et al.* (2021), "Serendipity: Chance encounters in the marketplace enhance consumer satisfaction", *Journal of Marketing*, Vol. 85 No.4, pp. 141–157, doi: 10.1177/00222429211000344.

Kim, J. H. (2015), *Understanding narrative inquiry: The crafting and analysis of stories as research*. Sage publications.

Krotoski, A. (2011), "Digital serendipity: be careful what you don't wish for". *The Guardian International Edition*, 21 August.

Li, Y. *et al*. (2024), "Humans as teammates: The signal of human–AI teaming enhances consumer acceptance of chatbots". *International Journal of Information Management*, *76*, 102771, doi: 10.1016/j.ijinfomgt.2024.102771.

Liu, Y. *et al.* (2021), "Serendipity in human information behavior: A systematic review", *Journal of Documentation*, Vol. 78 No.2, pp.435–462, doi: 10.1108/jd-02-2021-0029.

Lutz, C., Pieter Hoffmann, C. and Meckel, M. (2017), "Online serendipity: A contextual differentiation of antecedents and outcomes", *Journal of the Association for Information Science and Technology*, Vol.68 No.7, pp.1698–1710, doi: 10.1002/asi.23771.

Makri, S. and Blandford, A. (2012a), "Coming across information serendipitously – part 1", *Journal of Documentation*, Vol. 68 No.5, pp.684–705, doi: 10.1108/00220411211256030.

Makri, S. and Blandford, A. (2012b), "Coming across information serendipitously – part 2", *Journal of Documentation*, Vol.68 No.5, pp.706–724, doi: 10.1108/00220411211256049.

Makri, S. *et al.* (2014), "Making my own luck': Serendipity Strategies and how to support them in digital information environments", *Journal of the Association for Information Science and Technology*, Vol.65 No.11, pp.2179–2194, doi: 10.1002/asi.23200.

Maloney, A. and Conrad, L. Y. (2016). Expecting the unexpected: Serendipity, discovery, and the scholarly research process. *White Paper*.

McBirnie, A. (2008). Seeking serendipity: the paradox of control. *Aslib Proceedings: New Information Perspective,* Vol. 60 No. 6, pp. 600-618, doi: 10.1108/00012530810924294

McCay-Peet, L. and Toms, E. (2011). "Measuring the dimensions of serendipity in digital environments". *Information Research: An International Electronic Journal*, *16*(3), n3.

McCay-Peet, L. and Toms, E.G. (2015), "Investigating serendipity: How it unfolds and what may influence it", *Journal of the Association for Information Science and Technology*, Vol.66 No.7, pp. 1463–1476, doi: 10.1002/asi.23273.

McCay-Peet, L. and Toms, E.G. (2017), "Researching serendipity in digital information environments", *Synthesis Lectures on Information Concepts, Retrieval, and Services*, Vol.9 No.6, pp. i-91, doi: 10.2200/s00790ed1v01y201707icr059.

Ng, M., Law, M., Lam, L., & Cui, C. (2023). A study of the factors influencing the viewers' satisfaction and cognitive assimilation with livestreaming commerce broadcast in Hong Kong. *Electronic Commerce Research*, *23*(3), 1565-1590.

Niu, W., Huang, L. and Chen, M. (2021), "Spanning from diagnosticity to serendipity: An empirical investigation of consumer responses to product presentation", *International Journal of Information Management*, Vol. 60, 102362, doi: 10.1016/j.ijinfomgt.2021.102362.

Oh, J. *et al*. (2022), "Serendipity enhances user engagement and sociality perception: the combinatory effect of serendipitous movie suggestions and user motivations". *Behaviour & Information Technology*, Vol.41 No.11, pp.2324-2341, doi: 10.1080/0144929X.2021.1921027.

Reviglio, U. (2017). Serendipity by design? How to turn from diversity exposure to diversity experience to face filter bubbles in social media. In *Internet Science: 4th International Conference, INSCI 2017, Thessaloniki, Greece, November 22-24, 2017, Proceedings 4* (pp. 281-300). Springer International Publishing.

Reviglio, U. (2019), “Serendipity as an emerging design principle of the infosphere: Challenges and opportunities”, *Ethics and Information Technology*, Vol.21 No.2, pp. 151–166, doi: 10.1007/s10676-018-9496-y.

Reviglio U. (2023). Cultivating Serendipity in Personalization Systems: Theoretical Distinctions. In *Serendipity Science. New Methodologies for Studying Serendipity: Tracing an Emerging Field*. Springer Nature.

Riessman, C. K. (1993). Doing narrative analysis. *Narrative Analysis. London: Sage Publications*.

Ritchie, J. *et al*. (2013). *Qualitative research practice: A guide for social science students and researchers*. Sage Publications, Ltd, London.

Rubin, V. L., Burkell, J. and Quan-Haase, A. (2011). Facets of serendipity in everyday chance encounters: a grounded theory approach to blog analysis. *Information Research*, Vol.16 No.3.

Schmidt, A. (2021). “The End of Serendipity: Will Artificial Intelligence Remove Chance and Choice in Everyday Life?”. In *CHItaly 2021: 14th Biannual Conference of the Italian SIGCHI Chapter*, pp. 1-4.

Singh, S., *et al*. (2015), “Failed, not finished: A narrative approach to understanding venture failure stigmatization”. *Journal of Business Venturing*, Vol.30 No.1, 150-166, doi: 10.1016/j.jbusvent.2014.07.005.

Smets, A. (2023). “Designing for serendipity: a means or an end?”. *Journal of Documentation*, Vol.79 No.3, pp. 589-607, doi: 10.1108/JD-12-2021-0234.

Statista. (2020), “eCommerce worldwide”, available at: https://www.statista.com/outlook/243/100/ecommerce/worldwide#market-age (accessed 29 July 2023).

Sun, X., Sharples, S. and Makri, S. (2011), “A user-centred mobile diary study approach to understanding serendipity in information research”, *Information Research*, Vol.16 No.3.

Van Andel. (1994) “Anatomy of the unsought finding. Serendipity: origin, history, domains, traditions, appearances, patterns and programmability”, *The British Journal for the Philosophy of Science*, Vol. 45 No. 2, pp. 631-648. https://www.jstor.org/stable/687687

Von Eschenbach, W. J. (2021), “Transparency and the black box problem: Why we do not trust AI”. *Philosophy & Technology*, Vol.34 No.4, 1607-1622, doi: 10.1007/s13347-021-00477-0

Wang, N. (2023), *Serendipity-oriented recommendations for improving user satisfaction* (Doctoral dissertation, Doctoral thesis, Hong Kong Baptist University. HKBU COMP. https://scholars. hkbu. edu. hk/ws/portalfiles/portal/77395158/G23THFL-035400T. pdf).

Wang, N., Chen, L., and Yang, Y. (2020), “The impacts of item features and user characteristics on users' perceived serendipity of recommendations”. In *Proceedings of the 28th ACM Conference on User Modeling, Adaptation and Personalization* (pp. 266-274).

Wang, Z. *et al*. (2023), “An Industrial Framework for Personalized Serendipitous Recommendation in E-commerce”. In *Proceedings of the 17th ACM Conference on Recommender Systems* (pp. 1015-1018).

Waugh, S., McKay, D., and Makri, S. (2017). “ ‘Too Much Serendipity’ The Tension between Information Seeking and Encountering at the Library Shelves”. In *Proceedings of the 2017 conference on conference human information interaction and retrieval*, pp. 277-280.

Xu, Y., *et al*. (2020), “Neural serendipity recommendation: Exploring the balance between accuracy and novelty with sparse explicit feedback”. *ACM Transactions on Knowledge Discovery from Data (TKDD)*, Vol.14 No.4, 1-25, doi: 10.1145/3396607

Yi, C., Jiang, Z. J. and Benbasat, I. (2017), “Designing for Diagnosticity and serendipity: An investigation of social product-search mechanisms”, *Information Systems Research*, Vol.28 No.2, pp. 413–429, doi: 10.1287/isre.2017.0695.

Zhou, X. *et al.* (2018), “A context-based study of Serendipity in information research among Chinese scholars”, *Journal of Documentation*, Vol.74 No.3, pp. 526–551, doi: 10.1108/jd-05-2017-0079.