



Narrative engagement in story listening: The challenge of age and vision loss

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ABSTRACT

Narrative engagement offers substantial psychosocial benefits, including cognitive health, emotional and social well-being, and longevity. However, vision loss in older adults can pose challenges in accessing printed narratives. As individuals may shift from print to auditory narratives due to age-related vision loss, understanding how this transition affects narrative engagement becomes crucial. The current work provides a synthesis of the intersection of aging, vision loss, and narrative engagement, focusing on cognitive, emotional, and sensory changes. We discuss how age and vision loss may modify critical components of story engagement, potentially altering narrative consumption and experience. Our research highlights the need to adapt research methodologies and measurement scales to suit older adults and auditory narratives, ensuring they capture unique aspects of auditory engagement and account for sensory impairments. We propose novel directions for studying narrative engagement and offer insights for future research to provide inclusive and accessible narrative forms that support the cognitive and emotional well-being of older adults.

Introduction

Vision loss is one of the most prevalent sensory impairments globally (World Health Organization, 2019) and is considered to increase substantially with age. More than 10 % of people aged 65 or older live with some form of irreversible vision loss (Horowitz, 2004; Mick et al., 2021), such as age-related macular degeneration (AMD), diabetic retinopathy, cataracts, glaucoma (Harvey, 2003), and retinitis pigmentosa (Watson, 2001). The onset of vision loss gives rise to day-to-day limitations (Haymes et al., 2002; Kempen et al., 2012; Rees et al., 2007), with reading difficulties being the most common reason for seeking vision rehabilitation (Owsley, 2009). For example, vision loss affects everyday reading abilities, including leisurely reading for pleasure, an activity with clear health effects. Immersive reading for pleasure is an important activity that contributes to emotional well-being and longevity by reducing stress and depression and inducing feelings of relaxation (du Sautoy, 2021; Quick Reads & Billington, 2015; Rane-Szostak & Herth,

1995). Yet, little scholarly work has focused on exploring narrative reading experiences for pleasure and enjoyment by people with late-onset vision loss.

Narratives function as information delivery systems “hardwired” into the brain over centuries of human evolution (Hokanson et al., 2018; Langellier & Peterson, 2011; Sanford & Emmot, 2012), and facilitate the comprehension and interpretation of complex human experiences, codify history, impart ethical and moral principles, and foster empathetic understanding through the vicarious experience of diverse perspectives across cultures and lives not immediately within reach (Benitez-Galbraith & Galbraith, 2021; Glonek & King, 2014; Green et al., 2002; Haigh & Hardy, 2011; Haven, 2007; Hineline, 2018; Langellier & Peterson, 2011; Mar & Oatley, 2008; Oatley, 2016; Smith, 1993; Wortham, 1993). Sustained interaction with narrative materials serves as a pathway to stay informed about current events, maintain and develop cognitive capacity, enhance empathic and emotional intelligence, strengthen feelings of social connectedness, and increase longevity, thus

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facilitating a range of psychosocial benefits (Bavishi et al., 2016; Cunningham & Stanovich, 1998; Djikic et al., 2013; Green et al., 2004; Kidd & Castano, 2013; Lin et al., 2022; Mar et al., 2009; Mar et al., 2011; Mar & Oatley, 2008; Oatley, 2016; Rane-Szostak & Herth, 1995; Sörman et al., 2018; Stanovich et al., 1995). Transitioning from print reading to book listening as vision loss progresses can offer a way to stay engaged with narrative materials (Lang & Brooks, 2015; Ryan et al., 2003). However, how individuals with age-related vision loss experience the shift to a different medium/modality, and how vision loss affects the immersive experience of auditory narratives, is unknown.

Our paper presents a synthesis of a diverse set of literatures that provide a conceptual and theoretical foundation for the study of narrative experiences in the context of aging and vision loss research. We draw on research from fields of social gerontology, vision loss, cultural and media studies, and cognitive domains of psychology and neuroscience. Given the limited research available, we present an overview of the theoretical boundaries of narrative engagement, focusing on the concept of *engagement* and the *multidimensional nature of story absorption* through scales used to understand and assess this construct. Next, we discuss engagement in auditory narratives and how such experiences may differ from those of reading print. We then explore the potential effects of age on narrative experiences and engagement. We extend this conversation to the context of vision loss, which presents additional factors relevant to narrative engagement. Finally, we propose avenues for further scholarly exploration of this topic and argue for interdisciplinary and critical methodologies to promote accessibility, cognitive stimulation, and emotional well-being in the context of aging and vision loss.

Narrative engagement

Broadly defined, narrative engagement is a concept describing the subjective sensation of being “lost” in the world of a story (Bilandzic & Busselle, 2017), a psychological state in which a book reader, a video game player, or a movie viewer perceives “a story in an immediate, emotionally and cognitively intense fashion” (p. 11).

Although narratives are encountered in various modalities (e.g., in print novels, movies, TV shows, and audiobooks), research on narrative experiences and questions of how individuals interact with and are affected by stories have primarily been studied in psychology, neuroscience, library and literacy studies, and media fields. In these domains, research has focused on the cognitive processing and comprehension of textual, visual, and audiovisual information (Magliano & Clinton, 2016; Rapp & Kendeou, 2007; Sanford & Emmot, 2012) through the concepts of engagement (Bilandzic & Busselle, 2017) and, more specifically, narrative engagement (Busselle & Bilandzic, 2009). Several other metaphorical terms and theoretical concepts proposed to characterize this feeling, depending on the type of narrative materials encountered, include *absorption* (Kuijpers et al., 2014) and *transportation* in textual narratives (Green, 2004; Green et al., 2004; Green & Brock, 2000), *immersion* (Ryan, 2001) and *presence* (Lee, 2004) in video games and virtual reality, alongside other sensations, such as *identification* with characters (Cohen, 2001), and even *flow*, denoting an intense occupation with an activity (Csikszentmihalyi, 2008).

Fundamental to this approach to narrative research is the understanding that narrative engagement requires comprehension. Comprehension entails cognitive processes that integrate the situational elements, characters, and relationships of the story into a causally coherent structure while activating various brain areas, including those responsible for sensory perception, memory encoding and retrieval, as well as functions linked to attention, reasoning, imagery, and deductive thinking (Mar, 2004; Song, Finn, & Rosenberg, 2021; Song, Park, et al., 2021). Not surprisingly, efforts to measure and quantify the phenomenologically subjective sensation of being engaged in a narrative tend to focus on obtaining individuals’ responses on scale items developed to correspond to these experiential and cognitive processes.

Measuring narrative engagement

Many self-report scale instruments have been developed and tested (Bilandzic & Busselle, 2017), among which the Transportation Scale (Green & Brock, 2000), Narrative Engagement Scale (Busselle & Bilandzic, 2009), and Story World Absorption Scale (Kuijpers et al., 2014) are the most frequently used and specifically designed measures of engagement with written or audiovisual story materials. These three scales aim to capture how individuals become engaged with or immersed in story materials, but they differ in their focus and the dimensions they consider essential for engagement.

The transportation scale is based on the assessment of the construct of transportation as a converging process where “all mental systems and capacities become focused on events occurring in the narrative” (Green & Brock, 2000, p. 701) to the extent that parts of the (real) world become inaccessible and the person who experiences the narrative enters the story world. Although often considered a unidimensional construct, transportation can be broken down into three components: *attentional focus* (deep concentration), *production of imagery* (the degree to which mental images are produced), and *emotional expressiveness* (experiencing intense emotions and motivations), which collectively produce the holistic experience of being drawn into the narrative world (Green & Brock, 2000). These features of transportation are also considered in other scales, detailed in the following paragraphs.

In the Narrative Engagement scale (Busselle & Bilandzic, 2008, 2009), the construct is considered multidimensional, incorporating not only *attention* and *emotional engagement* (feeling for and with characters), but also *narrative understanding* and *presence*. Busselle and Bilandzic (2009) and Bilandzic and Busselle (2017) describe narrative understanding as the ability to follow the plot and understand character motivations and actions, while presence is the sensation of being immersed in the story world rather than the real one. Although this multidimensional scale is more granular, providing a structured way to dissect the reader or viewer’s interaction with the narrative, a key focus is placed on comprehension.

The Story World Absorption Scale (Kuijpers et al., 2014), designed for text-based story absorption, includes dimensions of *attention*, *emotional engagement*, *mental imagery*, and *transportation*. *Attentional focus* refers to the feeling of an individual concentrating on the story to the extent that the reader loses awareness of their body, surroundings, and the passage of time (Gerrig, 1993; Green & Brock, 2000; Kuijpers et al., 2014). *Emotional engagement* pertains to the affective responses elicited by the narrative and the ability of the reader to identify and empathize with the characters. *Mental imagery* refers to the psychological phenomenon in which an individual recreates or simulates images or scenarios in their mind, such as visualizing scenery and characters, imagining action sequences, or conjuring sensory experiences. *Transportation* describes the subjective feeling of temporarily entering and being present in the world of the narrative, signifying a mental movement from the actual world to the story world (Kuijpers et al., 2014).

The Story World Absorption scale was developed to build on the previous two scales and constructs to address their limitations. For instance, in contrast to the work by Green and Brock (2000), transportation is seen as a separate experience distinct from the other three aspects, rather than the cognitive mechanisms that might facilitate such an experience. Moreover, the attention, emotion, and imagery items on the unidimensional Transportation Scale do not reliably form distinct subscales (Kuijpers et al., 2014). Finally, the Narrative Engagement scale was developed using film stimuli, which do not include mental imagery and may not generalize to media lacking a visual component, such as written novels or audiobooks (Busselle & Bilandzic, 2009), possibly failing to capture the multifaceted nature of narrative experiences.

Outcomes of narrative engagement

Enjoyment is considered a separate dimension and the outcome of an engaging narrative experience (Kuijpers et al., 2014). Attention, emotional engagement, mental imagery, and transportation dimensions predict respondents' enjoyment when reading a story (Kuijpers et al., 2014). Materials producing high engagement or absorption are thought to afford great experiential gratification that motivates continued engagement with stories (Brewer & Lichtenstein, 1982; Hofer et al., 2014; Oliver & Raney, 2011). Pleasure, enjoyment, entertainment, and the opportunity to pursue eudemonic objectives, such as "meaning" experienced during narrative engagement, are not only proposed to be direct outcomes of or responses to immersion in narratives (Brewer & Lichtenstein, 1982; Busselle & Bilandzic, 2008; Green et al., 2004; Kuijpers et al., 2014; Oliver & Raney, 2011; Vorderer et al., 2004) but also directly related to maintaining good health and well-being across the life course (Bavishi et al., 2016; Clark & Rumbold, 2006; Quick Reads & Billington, 2015).

Summary of research and scale development for narrative engagement

Narrative engagement is thought to encompass the processes of attention, mental imagery, emotional engagement, and transportation, explaining how individuals interact with and are affected by stories. Yet, collectively, the corpus of narrative engagement research, particularly the development and use of measurement scales, has focused on the experiences of adults aged 45 years or younger, mainly in visual or audio-visual modalities and without sensory impairments (Busselle & Bilandzic, 2009; Green & Brock, 2000; Herrmann & Johnsrude, 2020; Kuijpers et al., 2014; Lange et al., 2022). This means that the body of research is rich in insights about the psychological processes underlying story absorption but has not yet adequately accounted for the distinct experiences and/or challenges associated with aging or sensory impairments. Moreover, narrative engagement research has preferentially explored print or audiovisual formats, neglecting the study of auditory narratives in isolation.

Auditory narrative engagement

Few studies have examined auditory forms of narrative engagement, such as spoken stories, using existing scale measures. However, a series of emerging findings build out the research on the abovementioned constructs, such as story absorption, in ways that could establish a knowledge base around auditory forms of narrative engagement. In a series of experiments investigating the relationship between listening effort and story absorption, Herrmann and Johnsrude (2020) demonstrated that an adapted version of the Story World Absorption Scale effectively distinguished participants' ratings between narratives designed for engagement and those intended to facilitate sleep. They also found that listeners rated stories in the presence of moderate background noise as absorbing as stories under clear conditions (Herrmann & Johnsrude, 2020). Panella et al. (2024) replicated this finding using only a subset of the items (Kuijpers et al., 2014) and noted that older adults maintained consistent absorption across listening sessions. In comparison, younger adults showed decreased absorption, suggesting the scale may be sensitive to experimental manipulations in different age groups (Panella et al., 2024). In this vein, Mathiesen et al. (2024) used the scale to examine differences in auditory narrative engagement among older and younger adults. Their results indicated uniform absorption and enjoyment ratings across participants aged 20 to 78 years. However, the results also showed that older adults enjoyed the less engaging stories more than their younger counterparts, indicating that older participants may have used the scale differently or that their preferences, contextual knowledge, or reference frames differ from younger adults (Mathiesen et al., 2024).

Physiological responses, including eye movements, and acoustic

features of the media, such as the articulation rate of the speaker (i.e., speech tempo), also appear to predict absorption in audiobook listening (Lange et al., 2022). Lange et al. (2022) suggest that auditory narrative absorption involves unique sensory and cognitive interactions not typically considered in studies of other media (Lange et al., 2022). However, while their research revealed various relationships among physiological, acoustic, and self-report measures in younger adults, the authors only used a condensed version of the Story World Absorption Scale that did not permit a deeper delve into the multi-dimensional aspects of listening absorption itself. Relatedly, Richardson et al. (2020) compared self-reported and physiological absorption responses to spoken stories and movie clips in younger adults, reporting greater engagement when participants watched movies compared to listening to spoken versions of the same stories. However, physiological indicators such as heart rate, temperature, and electrodermal activity suggested higher engagement levels during the listening tasks. The authors proposed that listening to stories was more cognitively and emotionally engaging at a physiological level than watching a video, arguing that videos engage viewers with less effort because the visual content is more directly communicated. At the same time, there are higher imaginative demands for co-creating the auditory narrative during listening (Richardson et al., 2020).

The construct of transportation has also been used in auditory engagement. Comparing transportation using the Transportation scale (Green & Brock, 2000) across media formats, Gregg (2022) investigated how modality (text vs. audio) and voice (human vs. synthetic) affected engagement. The study used high-quality, professionally recorded material and a speech synthesizer to examine variations in cognitive load, enjoyment, and transportation between printed and spoken text narratives, finding that text and human speech yielded similar responses, were enjoyed more, and resulted in higher transportation scores than synthetic speech (Gregg, 2022). Finally, although not examining audio in isolation, Reinhart et al. (2021) used the Transportation scale to measure the degree to which participants become absorbed into an audiovisual, compared to a textual narrative. They found that the scale was not unidimensional, and the factor structure was inconsistent between formats, suggesting that the dimension of transportation may be experienced differently phenomenologically through listening compared to reading print.

Together, these studies suggest that auditory narratives may produce distinct absorption experiences compared to print, particularly among older adults. The variability in engagement may stem from limitations in measurement tools, which either do not capture the unique aspects of auditory narratives or are not adapted to older populations. Emerging research in literary theory increasingly acknowledges the need for more comprehensive frameworks to understand audiobooks as a different research object than printed books, requiring distinct analytical approaches to examine auditory dimensions (Kosch et al., 2024). To better understand these dynamics, we now explore some of the cognitive processes involved in auditory engagement, particularly in comparison to reading print.

Reading print and listening to auditory narratives

Empirical research from diverse fields has explored how auditory and textual stimuli differ in terms of perception, processing, and comprehension (Clinton-Lisell, 2022; Rogowsky et al., 2016; Shaojie et al., 2022; Singh & Alexander, 2022; Steindorf et al., 2023). In parallel, theoretical work has considered the additional implications of transforming written texts into spoken words through remediation, defined as the process of refashioning a representation of a work in a medium different from the original (Bolter & Grusin, 1999; Have & Pedersen, 2015; Tattersall Wallin, 2021), in this case using a narrator. Although most studies focus on educational settings and younger listeners (e.g., Clinton-Lisell, 2022; Singh & Alexander, 2022), we address the comparisons between modalities as they inform further development of

research in the field of auditory narrative engagement among older adults.

A synthesis of positron emission tomography (PET) and functional magnetic resonance imaging (fMRI) research on heard speech, spoken language, and reading indicates a shared neural network underpinning language processing across modalities (Price, 2012). Distinct activations in brain regions specific to auditory versus visual stimuli processing have also been observed (Buchweitz et al., 2009; Price, 2010). Still, most empirical evidence shows little or no difference in comprehension and retention of content between reading and listening, suggesting that the brain represents semantic information similarly, independent of input modality (Deniz et al., 2019; Rogowsky et al., 2016; Singh & Alexander, 2022).

However, attention deployment and control may differ when listening to versus reading print narratives (Alho et al., 2014; Moisala et al., 2015; O'Leary et al., 1997). Reading text requires visually decoding symbols, recognizing words, and integrating them into coherent sentences and paragraphs. The reading pace can be controlled, and segments can be re-read for clarity. In contrast, auditory input is transient in nature and does not allow for easy and immediate backtracking (Michael et al., 2001). Listening to an audiobook may increase cognitive load, as listeners must keep up with the pace of the narration. Difficulties with accurately representing information in working memory and maintaining focused attention while listening have indeed been found to lead to poorer comprehension in children (Jiang & Farquharson, 2018). This has not been examined in older adults.

Perhaps surprisingly, mental imagery has not been explicitly studied in the auditory narrative domain, although listeners appear to extract meaningful information from sonic cues to construct mental representations similarly to when reading text (Alexander & Nygaard, 2008; Rodero, 2012). Yet, emerging theoretical conceptualizations of audiobook listening, primarily within media studies, suggest that audiobook listening may elicit multisensory and affective forms of imagery that differ from those studied in print reading, due to the distinct materiality and performance of sound and voice situated within broader sensory and environmental contexts (Have & Pedersen, 2022; Kuzmíčová, 2016; Tattersall Wallin, 2021). Specifically, scholars point out that listening often occurs while moving, or engaging with tactile environments and interfaces (e.g., playback device), making audiobook listening a dynamic and spatially embedded practice (Tattersall Wallin, 2021). Moreover, prosody, intonation, pitch, and pace of the vocal performance might evoke a sense of urgency, tension, or intimacy that could shape how a scene is imagined. As a consequence, mental imagery could be thought of as constructed from the words heard in the more traditional sense (i.e., forming vivid mental representations of scenes and events through narrative descriptions), and additionally as emerging through the interplay of narrative sound, bodily engagement, and ambient surroundings (Kuzmíčová, 2016). Whether the sensory and material dimensions of sound have implications for mental imagery during narrative listening is unknown, but it is likely that the auditory modality uniquely contributes to how stories are experienced, felt, embodied, and imagined, thus potentially altering narrative engagement experiences. Central to this configuration is the narrator's voice, to which we now turn as a key sensory and emotional conduit in audiobook engagement.

Narration and voice

Empirical research on voice and narration in auditory engagement research is also underexplored, with few exceptions. Research suggests that human-narrated stories are more enjoyable, elicit more vivid mental imagery, and foster stronger narrative engagement than stories that use synthesized voices (Rodero & Lucas, 2023). Accordingly, listeners also exhibit higher attention levels, more positive emotional responses, and better information retention with human voices. Nevertheless, advances in artificial intelligence are leading to naturalistic synthesized speech that sounds increasingly human-like and is used

in experimental research (Herrmann, 2023, 2024).

Although empirical research on the effect of audiobook narration on engagement is limited, several scholars within the humanities, sociological, and sound studies fields emphasize the importance of the voice for the audiobook listening experience and propose ways of integrating this into their analyses. For instance, Have and Pedersen (2015) argue that the voice is not merely an information carrier but embodies characteristics such as gender, age, and emotional state, suggesting that the voice and performativity of the narrator may be the most determining factor for the resulting absorption into the auditory narrative (Have & Pedersen, 2015). In her critical examination of the perception that audiobooks provide a lesser narrative experience compared to print, Kuzmíčová (2016) emphasizes that audiobooks offer unique aesthetic and hedonic benefits, particularly through the presence of a human voice, including the engagement of multiple sensory modalities and the facilitation of mental daydreaming, both of which can enhance overall narrative enjoyment and personal well-being.

Summary on auditory narrative engagement

The body of literature relevant to auditory narrative engagement suggests that potential nuances of media-specific engagement, such as comparisons between reading print and listening to audiobooks, have been minimally addressed with any population. It is, therefore, unclear whether the dimensions of the measurement tools apply to auditory narratives. The Story World Absorption Scale (Kuijpers et al., 2014), Transportation (Green & Brock, 2000), and Narrative Engagement (Busselle & Bilandzic, 2009) scales provide a valuable framework for measuring narrative engagement, but may require adaptation to reflect the unique cognitive and sensory processes involved in auditory narrative experiences. Further questions pertain to the application to different population groups, including older adults and individuals with sensory impairments who may use the scales differently. The following sections explore how the aging process may affect the dimensional constructs of attention, mental imagery, emotional engagement, and transportation.

Age-related changes and narrative engagement

Biomedical and cognitive science has established that concurrent transformations are considered to occur with age (Glisky, 2007; Li & Lindenberger, 2002; Lindenberger, 2014), including speed of information processing (Brown & Park, 2003; Craik, 1999), working memory function (Braver et al., 2001; Craik, 1999), attention (Gopher & Koriat, 1999; Guerreiro et al., 2010; Rogers, 1999), capacity for mental imagery (Craik & Dirks, 1992; Craver-Lemley et al., 2010; Kemps & Newson, 2005; Park, 1999), and processing of muffled or distorted speech signals, which, in turn, can lead to higher cognitive listening demands (Fostick & Schneider, 2022; Wayne & Johnsrude, 2015). These changes affect daily living (Brown & Park, 2003; Craik & Dirks, 1992; De Beni et al., 2007; Lindenberger, 2014; Marcum, 2013; Moreno-Agostino et al., 2020; Scheibe & Carstensen, 2009), and could potentially influence engagement with narratives. We now turn to age-related changes that might affect narrative experiences along the four dimensions previously described as part of our exploration of narrative engagement and which appear in the Story World Absorption Scale (Kuijpers et al., 2014).

Attention

Engaging with narratives involves an array of cognitive and neural processes simultaneously to integrate and comprehend the story elements and construct a global narrative coherence (Honey et al., 2012; Mar, 2004; Regev et al., 2019). Research in the cognitive neurosciences has found that older adults process information more slowly than younger adults (Brown & Park, 2003; Park, 1999) and that performance on effortful tasks may be reduced, such as those which involve a deliberate search for information from memory, information

manipulation, or conscious problem-solving, making sustained focus more difficult (Brown & Park, 2003; Craik & Dirks, 1992; Park, 1999; Rogers, 1999). Similarly, processing which requires proactive cognitive control, such as directing continuous attention toward goals and ignoring interference, also seems to decline with age, making older adults more susceptible to environmental distractions (Alain et al., 2018; Biss et al., 2018; Braver, 2012; Braver et al., 2001). As a result, older adults may employ more reactive control strategies where attention is being mobilized in response to specific stimuli or interference, encoding a broader, and sometimes less filtered, range of information from the environment (Biss et al., 2018; Gopher & Koriati, 1999).

This body of research suggests that age-related changes in cognitive control may, thus, have implications for the attentional aspects of narrative engagement. Being more easily distractible and/or influenced by external cues (Braver, 2012) could affect concentration during the narrative experience, especially in environments with potential distractors. Research exploring the quality of attentional focus during narrative engagement in younger and older adults could reveal whether processes related to aging reduce attentional focus or whether narrative engagement reflects a stronghold in the aging process that is insensitive to expected changes in cognitive and attention control associated with aging.

Mental imagery

Immersion in a story relies on the ability to generate vivid mental images, a process involving the visualization of internal percepts, mental simulation of evolving narrative events and situations, and vividness (De Graaf et al., 2009; Green, 2004; Green et al., 2004; Green & Brock, 2000; Reinhart et al., 2021). Substantial evidence shows that memory is crucial for vivid mental imagery and simulation (Addis et al., 2010; Schacter et al., 2008). Yet, episodic and prospective memory, which allows individuals to recall past experiences and imagine future scenarios, is often considered to decline with age (Addis et al., 2008; Schacter et al., 2008). In psychological experiments, older adults consistently appear to generate fewer episodic details for past and future events and recruit additional cognitive resources to create coherence in imagined events (De Beni et al., 2007; Schacter & Addis, 2007). Research also finds older adults to be slower and less accurate in tasks related to mental image maintenance (retaining images over time), scanning (shifting attention over an imagined object), and manipulation (rotating or transforming an imagined object in the mind) than younger people (Craver-Lemley et al., 2010; Kemps & Newson, 2005). It is important to note that the body of research on mental imagery predominantly asks study participants to perform mental manipulation tasks that use simple and abstract stimuli, such as colors, geometric shapes, letters, or isolated objects (Cattaneo et al., 2007; Craik & Dirks, 1992; De Simone et al., 2013; Dror & Kosslyn, 1994; Kemps & Newson, 2005; Monzel et al., 2021). Thus, imagining isolated objects or simple scenes may overlook the interconnectedness and contextual richness in real-life scenarios or in narratives, where elements are rarely perceived in isolation or without detailed descriptions.

The degree to which aging affects mental imagery in the context of narrative experiences is unclear, yet suggests paths for exploration. The perceptual vividness, clarity, and detail of mental imagery have been less extensively studied in the context of aging, although increasing age has been shown to correlate with a self-reported decrease in the vividness of imagined mental images (Gulyás et al., 2022). An eye-tracking study suggested that individuals with strong autobiographical memory often rely on visual systems, such as eye movements, to support the production of rich memories (Armson et al., 2021). This reliance on visual systems might extend to generating vivid mental images during narrative engagement. If older adults experience a decline in both visual system function and mental imagery vividness, their ability to engage deeply with narratives may be further compromised. Known age-related changes in working memory could result in slower and less accurate

mental manipulation and the creation of vivid imagery percepts. Research on this dimension could focus on questions related to whether older people construct coherent and detailed mental images during narrative engagement and whether age or vision loss, or perhaps the combination, affects the ability to follow complex storylines or visualize intricate details that interfere with the narrative experience.

Emotional engagement

Mood and emotions are also considered to affect how narratives are experienced and comprehended (Mar et al., 2011; Rosa & Lehtimäki, 2021). People in a positive mood tend to focus better on crucial aspects of the story, whereas those in a negative or neutral mood might find their attention more scattered, leading to a less coherent understanding of the narrative (Bohn-Gettler & Rapp, 2011; Mar et al., 2011). Interestingly, both positive and negative moods have been found to enhance comprehension and memory recall more than a neutral mood (Bohn-Gettler & Rapp, 2011). The ease of integrating narrative content can also be affected by whether it aligns with the reader's current mood (Egidi & Nusbaum, 2012), and positive attitudes toward characters in a film can increase engagement and enjoyment (Owen & Riggs, 2012). This is consistent with recent work showing that a positive mood was associated with higher story absorption and enjoyment of a spoken story (Mathiesen et al., 2024).

In terms of aging, older people have been found to generally experience more positive affect despite functional health problems that may decrease subjective well-being (Kunzmann et al., 2000; Stanley & Isaacowitz, 2011). Social and emotional functioning and personality traits remain stable into older age (Charles & Carstensen, 2010), and older adults prioritize emotionally meaningful goals and relationships more than younger adults (Carstensen et al., 1999; Carstensen et al., 2003; Charles & Carstensen, 2010; Kennedy et al., 2004; Reed & Carstensen, 2012; Scheibe & Carstensen, 2009). This is reflected in their preference for positive stimuli (Chukwuorji & Allard, 2022; Reed & Carstensen, 2012) and emotionally meaningful entertainment (Hofer et al., 2014; Mares et al., 2008; Mares & Sun, 2010; Mares & Woodard, 2006), and they tend to recall memories more positively than younger adults (Kennedy et al., 2004). What remains unknown, however, is whether preferences toward seeking more positive experiences affect the selection of narrative materials and/or how the narratives are experienced during engagement. The nature of older people's emotional engagement may be qualitatively different during positive and confirmatory narratives than more negative or disturbing narrative elements, which may lead to reduced engagement and possibly disengagement from the materials. While most existing research focuses on how mood influences engagement, it is worth noting that the reverse direction – narrative engagement influencing mood – remains underexplored, particularly in the context of aging. The potential bidirectionality of mood effects represents an important area for future research on the psychosocial affordances of narrative engagement for this population.

Transportation

The transportation dimension of narrative engagement (Green & Brock, 2000) echoes some of the cognitive, emotional, and imagery processes outlined above. For instance, age-related difficulties in ignoring irrelevant environmental information or distractors and a reduced ability to maintain focused attention during narrative engagement would likely lead to a weaker sense of being transported into the narrative world. Furthermore, older adults might find it more challenging to visualize scenes and characters described in a narrative, a crucial component of transportation.

Extending these questions to our consideration of narrative engagement leads us to ponder if and how age-related changes in emotions and mood might further affect how older adults connect with characters and the emotional sensations they experience when engaging with

narratives. If experiences related to the dimensions of attention, mental imagery, and emotional engagement undergo changes associated with aging, the qualitative experiences and feelings of entering and being present in a different world could be expected to change as well. This could mean that despite younger and older adults showing the same levels of transportation into a story world when measured on quantitative scales, the quality of the transportation sensation may, in fact, differ across ages, time, and life course.

Summary on age-related changes and narrative engagement

As we have explored, aging brings about various cognitive, emotional, and sensory changes that may influence how older adults engage with narratives. These changes, such as slower information processing and diminished mental imagery, can affect the ability to focus on and become immersed in stories, potentially altering the quality of narrative engagement. However, these transformations are just one aspect of the broader aging experience, and even with decline, older adults often show gains in world knowledge, vocabulary, and domain-specific knowledge (Ben-David et al., 2015; Dixon, 1999), which could influence the gratification derived from narratives. A particularly significant age-related factor in the context of narrative engagement is, however, vision loss, and the possible transition from print to auditory narratives may prompt or create changes affecting narrative engagement. In the next section, we turn to this specific juncture of aging, vision loss, and the transition to auditory narratives.

Age-related vision loss and the transition to auditory narratives

The literature at the intersections of visual impairment and cognitive neuroscience suggests that vision loss exacerbates the cognitive decline associated with typical aging processes described in previous sections, including difficulties with memory, spatial orientation, problem-solving, and other cognitive tasks (Aubin et al., 2023; Clemons et al., 2006; Whitson et al., 2010; Yin Wong et al., 2002). Additionally, age-related vision loss (defined as uncorrectable visual impairment, particularly in those aged 60 and above, according to Brown & Barrett, 2011) adversely affects psychosocial well-being, with depression, anxiety, social isolation, and loneliness being common among older persons with visual impairments (Alma et al., 2010; Alma et al., 2012; Berger et al., 2013; Brody et al., 2001; Brunes et al., 2019; Casten et al., 2002; Mick et al., 2018; Tobias & Mukhopadhyay, 2017; van der Aa et al., 2015). While the specific cognitive and social components of vision loss and their possible effects on narrative engagement have not been studied, the insights about absorption outlined in the previous section may suggest challenges with transitional aspects of adjustment, as well as focus and/or becoming immersed in stories. Given the lack of literature on engagement, particularly from an interdisciplinary perspective, we outline what is known in the cognitive space as a point to consider and extend what we may know and need.

Vision loss and cognitive aspects of narrative engagement

Evidence from cognitive neuroscience and psychology research highlights two areas of cognition and sensory processing that could affect narrative experiences in the context of vision loss, namely visual imagery and auditory abilities. First, congenital or early-acquired vision loss (e.g., individuals born blind or whom lost their vision by or before age 5) is associated with diminished visual imagery (Eardley & Pring, 2007; Ernest, 1987; Knauff & May, 2006), which could have implications for the ability to form mental images during narrative engagement. However, these findings do not seem to extend to individuals who develop vision impairment later in life, as they have had previous visual experiences (although see Cattaneo et al., 2007). It is possible that mental imagery processes could be different for older individuals, depending on the onset of vision loss.

Second, auditory processing abilities have been shown to improve for individuals with early-acquired vision loss, particularly auditory imagery, spatial attention, and perception of frequency, pitch change, and musical chords (Sabourin et al., 2022). This idea, which corresponds with ideas about adjustment to impairment or loss, could lead to the assumption that individuals with vision loss would experience an advantage in absorption when transitioning to auditory narratives. However, these auditory processing changes tend to be less pronounced for individuals with late-onset vision loss (Cattaneo et al., 2007; Gougoux et al., 2004; Kolarik et al., 2021; Sadato et al., 2002), leaving gaps in our understanding of the intricacies of age-related vision loss and how vision loss affects the auditory system with regard to auditory narrative engagement.

In addition to changes in visual and auditory processing, hearing loss often co-occurs with vision loss in later life, leading to dual sensory impairment (Mick et al., 2021). Research on speech perception in aging suggests that age-related hearing difficulties are most pronounced in noisy or multi-talker contexts, whereas speech in quiet remains relatively accessible, particularly when enhanced through assistive technologies such as hearing aids (Amos & Humes, 2007; Billings et al., 2024; Lee, 2015; Pichora-Fuller et al., 2016). Given that audiobooks are typically delivered as clear speech without background noise or competing talkers, the auditory challenges involved in audiobook listening are likely less pronounced than those encountered in other listening contexts. Nevertheless, future research should consider how dual sensory impairments affect audiobook engagement.

The evidence presented in this section leaves unanswered key questions of how age-related vision loss affects narrative engagement and whether/how older adults may draw on different cognitive systems and mental operations after the onset of vision loss. Moreover, what becomes interesting in considering physiological, psychological, and social processes together is how the experience of narratives may be shaped not only by changes in cognition but by the transition to a new modality itself. Navigating this transition might be characterized by several factors beyond the cognitive processing of the stories themselves, including personal successes with transitions over the life course and adapting to new ways of engaging with technology and media, such as audiobooks. The following section focuses on the practical transition to audiobooks as a possible example of transition and adaptation in everyday life.

Vision loss and the adjustment to auditory narratives and technologies

Vision loss has traditionally been framed within medical and functional models that emphasize disability and the biological decline of the senses or consider vision loss as a “normal” part of aging (Swenor et al., 2020). Research in vision health has predominantly described the negative effects of age-related vision loss on reading materials such as recipes, financial statements, road signs, and product labels (Burmedi et al., 2022; Magnus & Vik, 2016; Ryan et al., 2003). Accordingly, it is not surprising that the transition to vision loss often necessitates the introduction of assistive devices and/or information and communication technologies (Jones et al., 2019; Miller et al., 2018; Riazi et al., 2011) and that vision rehabilitation typically focuses on training in the use of assistive devices, such as visual aids and practicing using residual vision to improve reading for these tasks (Magnus & Vik, 2016; Martiniello et al., 2022; McGrath & Corrado, 2019a; Ryan et al., 2003; Smallfield & Kaldenberg, 2020; Smith, 2008). However, there is research that finds older adults with age-related vision loss underutilize such assistive devices (Martiniello et al., 2018, 2022; McGrath & Corrado, 2019b) and that older people approach adaptive devices as a last resort, preferring behavioral changes or optimization of existing sensory resources (e.g., optical devices) to maintain abilities to perform visual tasks, for instance, to read print, over the adoption of a modality that can sometimes be perceived as challenging (Gitlow, 2014; Horowitz et al., 2006; Piper et al., 2017). This focus on the transition to auditory

narratives could thus be described in broad strokes as functional or instrumental, leaving the questions of experience and our topic of narrative engagement mainly unexplored.

In the case of age-related vision loss, the cognitivist and biomedical models of aging that emphasize functional and clinically measurable outcomes, such as improving reading ability in patients with visual impairment (Binns et al., 2012), often overlook real-world experiences such as reading a book. Even a focus on adaptation from reading print materials to consuming narratives through auditory formats, such as audiobooks (Lang & Brooks, 2015), emphasizes indicators such as independence, resilience, and maintaining physical and cognitive function (McGrath et al., 2016, 2017), thereby aligning with broader normative societal expectations around “aging well,” and introducing negative interpretations where adaptive technologies become markers of ‘decline’ and marginalization (Burton et al., 2024; Urtamo et al., 2019). A landscape may then emerge where adjusting to technologies for reading due to vision loss comes to represent broader emotional, social, and cultural meanings about impairment and disability. Older adults may view adaptive equipment as embodying unwanted narratives of decline and perpetuate representations of functional and ageist interpretations of their experiences (Grenier, 2007; Grenier & Hanley, 2007). In this interdisciplinary context, we suggest that the unique personal experiences and forms of narrative engagement used to maintain the practicalities and pleasures of a story through reading/listening represent a crucial turning point in understanding the challenges of age-related vision loss. In the final section that follows, we outline a series of novel research directions that address this specific intersection of aging, vision loss, and the transition to auditory narratives, linking ideas within cognitive neuroscience, psychology, and media studies with those of disability studies and social gerontology more broadly.

Discussing the future of auditory narrative experiences in age and vision loss

In this paper, we have explored the intersection of aging, vision loss, and narrative engagement, detailing how previous work in this area has primarily focused on quantitative scales, visual/audiovisual media, and younger populations. In doing so, prior research has overlooked how the dimensions of the narrative-engagement construct may apply to older adults experiencing cognitive, sensory, emotional, and social changes. The practical example of aging with vision loss draws attention to the interplay between changes brought about by aging and those of vision loss. These overlapping transitions underscore the need to understand both the lived experiences of older people in this group and how they negotiate and manage transitions into new modalities such as auditory narratives, including whether this new format meets their needs for engagement. While audio formats are presented as solutions to bridge the gap of vision loss, the transitions these new formats require are not only individual but also influenced by broader social and material contexts and larger questions about communication. The transition to audio may present unique engagement opportunities but also raises a series of unanswered questions pertaining both to the practical adaptation to a new modality to maintain engagement and how this format may alter the experience in unexpected ways that fit/do not fit with the experiences and expectations of older people with vision loss. As such, understanding the dynamic and diverse experiences of this population is essential. In this final section, we propose several key research directions and specific research questions to advance the study of auditory narrative engagement in older adults and older adults with vision loss.

Lived experiences, inclusion, and diversity in narrative engagement research

Most existing research on narrative experiences has been focused on scale development to assess engagement, designed with visual media in mind (e.g., printed text or movie clips), potentially failing to capture

auditory-specific elements (Busselle & Bilandzic, 2009; Green & Brock, 2000; Hakemulder et al., 2017; Kuijpers et al., 2014; Richardson et al., 2020), particularly for populations of different ages and with sensory impairments. Excluding populations with disabilities from design processes has proven to perpetuate health disparities, social exclusion, and economic inequality, potentially resulting in inaccessible products and environments, and affecting the validity and reliability of research findings (Iwarsson & Ståhl, 2003; Krahn et al., 2015; Lollar et al., 2021; Raymond et al., 2024; Smith, 2008; Van Hees et al., 2020). Sampling and accessing such groups and appreciating the capacities and voices of individuals with different lived experiences enhances innovation and ensures inclusive, equitable practices in research (Foley & Ferri, 2012; Krahn et al., 2015; Okuno et al., 2021; Persson et al., 2015; Rubeis et al., 2022). In the context of narrative engagement, such inclusivity and accessibility considerations are largely missing.

We suggest that research practices start by exploring older adults’ personal experiences, perceptions, adaptation strategies, and/or barriers to narrative engagement through qualitative methods, such as interviews. This may help highlight narrative experiences that scale assessments are unable to capture. Employing various analytical approaches (e.g., phenomenological, hermeneutical, or narrative) can provide rich insights into the aging process, emphasizing the dynamic and transitional nature of growing older (Carpentier et al., 2010; Enoch et al., 2024; Grenier, 2012; Phoenix et al., 2010; Siren et al., 2022). Specifically, life history, or biographical interviews could offer insight into how older adults’ sensory trajectories shape their engagement with narratives over time, including the significance of prior print reading habits, transitions to audio formats, and evolving preferences for story types and narration styles (Fang et al., 2023; Kwan et al., 2023). Life story approaches would allow researchers to explore how narrative listening intertwines with personal identity, memory, and emotional well-being. Complementing interview-based approaches, ethnographic, and participatory methods could explore how audiobooks are integrated into daily life and routine. Such approaches are especially useful for understanding audiobook listening as a socially and spatially embedded practice (Aunger, 1995; Hammersley & Atkinson, 2019) where context, sensory perception, and technological interfaces may interact to shape narrative engagement. Incorporating interdisciplinary and qualitative methodologies from critical age studies, gerontology, media reception studies, sensory loss research, and accessibility studies is necessary to achieve both the inclusion of older people with vision loss and a better understanding of sensory loss and what narrative experiences mean as one grows older.

Specific research questions at this intersection include: How do older adults with late-onset vision loss experience the transition from print to audio narratives over time, and what emotional or identity-related challenges accompany this shift? How are audiobooks integrated into daily routines, and what roles do social settings (e.g., book clubs, caregiving environments, libraries) play in mediating access and engagement? What environmental or technological barriers (e.g., playback interfaces, device usability) affect audiobook use among older adults with vision loss? How can inclusive research practices better integrate the voices and capacities of older adults with diverse lived experiences?

Methodological development and innovation

Existing scale-based research suggests that narrative engagement can be measured through static definitions of “absorption,” “immersion,” or “transportation.” As we have argued, narrative engagement may also be a multifaceted experience involving cognitive, emotional, and sensory processes, social and material components that arise and interact through transitional events in later life. Work in this field requires a more relational and process-oriented approach that extends insights beyond existing scales and draws on interdisciplinary insights from gerontology, auditory reception, media communications theories, cognitive psychology, and accessibility research to capture how older

adults' narrative experiences are influenced by cognitive and emotional changes, the people around them, and the resources they have to access narrative materials. This paper is an attempt to sketch out some of the existing parameters to build a new research and practice agenda on engagement and transition to audio narratives for those aging with vision loss.

Methodological advancement should focus on adapting existing scales not only for auditory narrative media, but also for use with diverse populations. This involves refining tools like the Story World Absorption Scale (Kuijpers et al., 2014) to capture unique aspects of auditory engagement, such as sound quality, vocal performance, narration rate, and auditory scene setting (Have & Pedersen, 2015, 2022; Rodero & Lucas, 2023; Rodero & Mas, 2020). Moreover, scale development approaches must consider older adults' varying emotional, cognitive, and sensory needs, emphasizing the critical case for accessibility and inclusion to ensure that measurement scales are reliable and meaningful to use with diverse populations and groups occupying different social locations and experiences of privilege, marginalization, or inequality. Drawing together knowledge at disciplinary intersections to achieve this will increase methodological precision to highlight the dynamic nature of narrative experiences and adaptations to new technologies. Most importantly, the methods and tools used to understand the transition must also be attuned to the personal, human, and phenomenological aspects of engaging in a story in pleasurable, enjoyable, and "meaningful" ways (Brewer & Lichtenstein, 1982; Busselle & Bilandzic, 2008; Green et al., 2004; Kuijpers et al., 2014; Oliver & Raney, 2011; Vorderer et al., 2004).

Specific research questions in this area include: How can existing narrative engagement scales (e.g., the Story World Absorption Scale) be adapted to better capture auditory-specific features like voice quality, narration rate, and sound design? What new methods can be developed to account for the dynamic, relational, and multisensory nature of narrative engagement among older adults? How do cognitive, emotional, and social changes in later life interact with narrative engagement, and how can these interactions be measured meaningfully? In what ways can methodological tools be made more accessible and inclusive to account for diverse experiences and sensory abilities, social locations, and technological access?

Practical applications and implications

The social and cultural aspects of narrative experiences cannot be overlooked, considering that libraries and community centers are often at the forefront of providing resources and support to older adults, advocating for better access to information for the vision loss community, and offering spaces where older adults can feel part of a community (Bennett-Kapusniak, 2013; Glusker, 2014; Hughes, 2017). Work in our proposed field of narrative engagement and vision loss can help libraries expand their collections of auditory narratives, improve user experiences in navigation and interaction with auditory content, develop training programs for staff to assist older adults and individuals with vision loss, and develop inclusive programs and events that engage the vision loss community across the lifespan.

Advancements in our understanding of narrative engagement, particularly for older adults and individuals with age-related vision loss, may also drive design, production, and care innovation across various fields. For instance, reaching into technology development, narrative content creators may be encouraged to develop materials tailored to older adults' needs and preferences by leveraging advancements in speech technology. The evolving field of artificial intelligence (AI) tools for text-to-speech synthesis and audio processing powered by deep learning algorithms and neural networks (Inamdar et al., 2023; Tan et al., 2024; van den Oord et al., 2016; Xin et al., 2023) presents opportunities to create customized auditory narratives in different languages and accents through decoding and replicating the characteristics of human speech, including prosody, intonation, and emotiveness (for

use of AI-generated and synthesized narratives in research, see Herrmann, 2025c, Herrmann, 2025a, Herrmann, 2025b). As these capabilities continue to improve, the co-creation and production of new materials and the remediation of existing textual narratives will see further progress.

Finally, the outlined research has implications for clinical and social healthcare practice in developing interventions to enhance well-being and cognitive health for older individuals experiencing vision loss. It has been suggested that training mental imagery as an encoding strategy may improve recall and memory (Brosch, 2018; Vranic et al., 2021). Narratives could thus be used to expand visualizing capacity through their unique ability to evoke multifaceted imagery. Guided auditory narrative listening or audiobook groups offer entertainment and therapeutic benefits to existing programs and vision rehabilitation strategies (Lang & Brooks, 2015). Meaningful experiences with narratives during key transitional moments, such as vision loss, could also hold the potential for either successful transitions or unmet needs (Grenier, 2012).

For instance, multiple studies reveal a compelling case for the benefits of bibliotherapy and other reading and listening activities on older adults' emotional and social health (DeVries et al., 2019; Heydon & Stooke, 2023; Kidd, 2022; Lang & Brooks, 2015; Longden et al., 2016; Poerio & Totterdell, 2020; Rane-Szostak & Herth, 1995; Rothbauer & Dalmer, 2018). Reading groups, audiobook clubs, and sharing the love of reading enhance social engagement, reduce feelings of loneliness, and are a source of pleasure and mindfulness, fostering resilient attitudes and behaviors among aging readers (Rothbauer & Cedeira Serantes, 2022; Rothbauer & Dalmer, 2018). Thus, by understanding how older adults with vision loss experience auditory narratives and related technologies, health and social care practitioners and community support workers can better support the emotional and cognitive needs of people with vision loss.

Specific research questions on this topic include: How can public institutions like libraries and community centers better support the narrative needs of older adults with vision loss? How can audiobook content be co-developed or tailored using advances in AI-generated narration to meet older adults' preferences? How might guided narrative listening or audiobook-based interventions be integrated into vision rehabilitation or therapeutic programming? How do shared narrative experiences (e.g., book clubs, listening groups) foster social connection and resilience in aging populations? What are the key emotional and cognitive benefits of narrative engagement during transitional life events such as the onset of vision loss?

Concluding remarks

With the complexities of aging in mind, the effects of vision loss on narrative engagement leave gaps in our understanding of how narrative experiences contribute to well-being and quality of life among older adults. The current article has addressed these gaps through a discussion across vision science, cognitive psychology, media studies, social gerontology, health communication, emotional and social psychology, and literary theory spaces. We have presented the case for the concept of narrative engagement to illuminate how processes, shifts, and transitions in aging, in particular vision loss, intersect with leisure narrative experiences at multiple levels, from perception, processing, and reception of narratives to production, sharing, and the role of narratives in shaping identity and continuity in later life. The proposed field of study invites a shift away from frameworks that locate value in technology adoption, individual resilience and independence, and cognitive maintenance. Instead, it opens possibilities for rethinking what counts as meaningful engagement through approaches that recognize narrative practices as relational, affective, and embedded in social and material contexts. Specifically, exploring how older adults with vision loss listen – or do not listen – to audiobooks positions auditory narrative engagement as a site for reconsidering how technologies, systems, and research frameworks can be (re-)designed to support diverse ways of aging. Our

proposed research agenda thus contributes to broader, equity-oriented conversations on the social, cultural, and material conditions that shape how aging and disability are experienced beyond the biological perspective.

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Ethics approval was not required for the preparation of this article.

CRediT authorship contribution statement

Signe Lund Mathiesen: Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Amanda Grenier:** Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Walter Wittich:** Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Mahadeo Sukhai:** Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Björn Herrmann:** Writing – review & editing, Writing – original draft, Methodology, Funding acquisition, Conceptualization.

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Declaration of competing interest

The authors of this manuscript declare no conflicts of interest.

Data availability

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

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