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Prosocial Storytelling: Advancing the Field Through a Systematic Review

Nele Kadastik [1*], Sebastian Sadowski [2], Kobie van Krieken [3], Jos Hornikx [4]

[1] PhD Candidate, Centre for Language Studies, Radboud University, Nijmegen, Netherlands
[2] Assistant Professor, Centre for Language Studies, Radboud University, Nijmegen, Netherlands
[3] Associate Professor, Centre for Language Studies, Radboud University, Nijmegen, Netherlands
[4] Professor, Centre for Language Studies, Radboud University, Nijmegen, Netherlands
Corresponding Author: nele.kadastik@ru.nl

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ABSTRACT

The possibilities afforded by emerging media and technologies have attracted growing interest in the use of narratives for prosocial change, establishing prosocial storytelling as a promising area of research. Yet, as current research is scattered across various domains and disciplines, the conceptual foundations and methodological approaches for assessing the persuasive impact of prosocial narratives remain limited. The current review takes a first step toward advancing the field of prosocial storytelling by synthesizing and analyzing existing work across both traditional and emerging media. Following the PRISMA framework, we systematically review experimental studies that have examined prosocial storytelling (n=34) and analyze the narrative stimuli used in these studies (n=60), including their overarching themes and narrative features such as perspective and story ending valence. The findings demonstrate that studies tend to focus on text-based narratives and relatively few have measured actual prosocial behavior. The results furthermore point towards a need for research elucidating the use of narrative perspective, and the role of narrative ending and closure in prosocial narrative effects. We provide directions for future research and specific recommendations for scholars and practitioners working with prosocial storytelling across traditional and emerging media.

Keywords: Prosocial Storytelling, Narrative Persuasion, Literature Review, Extended Reality, Emerging Media.

INTRODUCTION

Past and ongoing global crises have highlighted the importance of individual and collective efforts toward positive social change. However, in recent years, global generosity, including charitable donations across EU, UK and USA, have witnessed a noticeable decline (Ray, 2025; Giva Sverige, 2024; EFA, 2024). This has led charities, nonprofits, and other organizations to place growing emphasis on storytelling across traditional, social, and digital communication platforms.

Merchant, Ford and Sargeant (2010) were among the first to call for research into storytelling in nonprofit and charity contexts. Since then, a growing body of interdisciplinary work has explored its potential for engaging donors and promoting charitable behavior (Kaczorowska, Conduit & Goodman, 2023; Keel & Tran, 2023). However, as research on prosocial storytelling is scattered across disciplines and draws on diverse methods, it also remains methodologically fragmented. The present review seeks to describe and synthesize existing work in order to advance prosocial storytelling as a consolidated area of research, while also informing future directions for scholarly and practical application.

In this review, we provide a working definition of "prosocial storytelling" as the strategic use of narratives to foster, promote, or reinforce prosocial engagement. Under this definition, we consider prosocial engagement as a multidimensional process oriented toward the

well-being of others or society at large (Snyder & Dwyer, 2013; Batson, 2010). More broadly, the impact of narratives on individuals' attitudes, beliefs, and behaviors is studied within the domain of narrative persuasion. Narrative persuasion has been well-documented in existing review literature (Braddock & Dillard, 2016; Oschatz & Marker, 2020; Ratcliff & Sun, 2020), but in comparison to other domains, such as health (De Graaf, Sanders, & Hoeken, 2016) and entertainment education (Moyer-Gusé, 2008), it has remained largely underexplored in the prosocial context. This context, however, can be considered unique because prosocial storytelling seeks to persuade audiences to engage in behaviors that benefit others rather than themselves.

As stories continue to shift to digital environments, prosocial storytelling too has begun exploring emerging media platforms and formats: from podcasts (e.g., StoryCorps, n.d.), Instagram and TikTok reels (e.g., Save the Children UK, n.d.), interactive narratives and serious games (e.g., Games for Change, n.d.) to immersive 360-degree and immersive virtual reality (IVR) initiatives (e.g., VR for Good by Meta, n.d.). Specifically, extended reality technologies, such as augmented reality (AR), virtual reality (VR) and mixed reality (MR), have demonstrated significant potential for promoting prosocial outcomes (Nikolaou, Schwabe, & Boomgaarden, 2022; Canet & Sanchez-Castillo, 2024; Yousefi et al., 2024). However, relative to the technological aspects, little attention has been paid to the narrative content (Martínez-Cano, Lachman, & Canet, 2023). To our knowledge, no existing review has yet explored prosocial storytelling with a specific focus on narrative content and its defining characteristics across both traditional and emerging media contexts.

To address these gaps, this review seeks to deepen theoretical understanding and refine practical insights into prosocial storytelling by systematically analyzing empirical studies across traditional and emerging media. The review explores not only the ways in which prosocial constructs have been examined, but also the narrative design features that may be relevant to prosocial storytelling. Accordingly, it aims to clarify and define the concept of prosocial storytelling, thus laying the groundwork for methodological approaches that can support researchers exploring its effects in the future.

Research Objectives

- To advance the conceptual understanding of prosocial storytelling by synthesizing foundational concepts from narrative theory, narrative persuasion, and the field of prosociality.
- To systematically review and characterize empirical studies that investigate narrative persuasion in prosocial storytelling.
- To analyze the design and content of prosocial storytelling narratives used in empirical studies.
- To identify key methodological insights from existing research that can inform and guide both methodological development and practical applications in the field of prosocial storytelling.

The article is organized as follows: the first section reviews the concepts of "narrative", and "prosociality" to propose a working definition of "prosocial storytelling". Additionally, it examines existing research on the role of the medium, narrative perspective and story resolution. The first section concludes with outlining the research questions and is followed by a description of the methodology. Thereafter, the results are outlined and followed by a discussion that contextualizes the findings within existing literature and suggests directions for future research. The paper concludes with a reflection on the study's broader implications and limitations.

LITERATURE REVIEW

To build a conceptual understanding of prosocial storytelling and establish its scope in empirical research, we begin by defining its key components, namely "narrative", "storytelling," and "prosociality". We also focus on narrative persuasion and the underlying intentions driving prosocial narratives as these motivations are central to the narrative methods used in telling them (i.e., in terms of narrative form and content). Lastly, we review the critical roles of medium, narrative perspective, and story resolution within the prosocial storytelling context.

On Narrative and Persuasion

One of the fundamental challenges in narrative persuasion research is that it has been hindered by inconsistent approaches and ambiguous definitions of the term "narrative", (De Graaf et al., 2016; Dahlstrom, et al., 2017). This has been further complicated by its widespread figurative use across academia, mass media, popular culture, and beyond (Korthals & Moenendar, 2024). Definitions rooted in structuralist narratology consider "narrative" as an artifact or textual "object" with a specific set of components, such as setting, characters, and events (Abbott, 2008). In this view, a narrative consists of signs, such as language or images, that give form to its meaning (Ryan, 2007), whereas storytelling refers to the use of these signs to structure (discourse) and convey

that meaning (story).

In the current review, we adopt the following definition: narrative as an expressive artifact composed of identifiable components, i.e. a causally related sequence of events that includes a setting, involves at least one character (an intelligent human or non-human entity), and presents some form of transformation, change, or development, whether in the characters, events, or setting, unfolding over time (Chatman, 1975; Abbott, 2008; Ryan, 2007).

Over the past three decades, research on narrative persuasion has sought to explain how narratives influence attitudes, beliefs, and behaviors. This has led to the formulation of various theoretical frameworks, including: *transportation*, described as "an integrative melding of attention, imagery, and feelings" (Green & Brock, 2000, p. 701); *story world absorption* which refers to the audience's psychological relocation during a narrative experience (Kuijpers, Douglas, & Balint, 2021); and *narrative engagement* as "flow in the experience of constructing mental models" (Bilandzic et al., 2008, p. 804). As a related but distinct mechanism, researchers have examined *identification*, "an experience in which readers adopt the perspective of a character and see the narrative events through the character's eyes" (De Graaf et al., 2012, p.804).

These theories, (particularly the narrative transportation theory) are often used to study how narratives promote and influence prosociality, or what has sometimes been referred to as *prosocial storytelling* (Kaczorowska et al., 2023; Pressgrove & Bowman, 2021). However, because the term "prosocial" encompasses a variety of constructs (e.g., generosity, altruism, cooperation), and is also closely related to concepts such as empathy, it becomes crucial to clarify its meaning, particularly when aiming to extend it to the idea of prosocial storytelling.

The Many Facets of Prosociality

Studies that focus on prosociality are typically interested in why and how individuals engage or fail to engage in actions that promote the well-being of others. However, similarly to the notion of "narrative", "prosociality" has been stated to suffer from "conceptual ambiguity" (Pfattheicher, Nielsen, & Thielmann, 2021, p. 124). This stems partly from the fact that motivations for prosocial behavior can stem from other-oriented (altruistic) goals (e.g., a genuine desire to support or comfort others) or self-oriented goals (e.g., seeking social approval, avoiding guilt, regret or shame, or expecting reciprocity; Batson & Shaw, 1991; Penner, et al., 2005; Malti & Speidel, 2024). Albeit, while all altruistic behaviors can be considered prosocial, not all prosocial behaviors should be interpreted as altruistic (Pfattheicher et al., 2021). For example, a person who donates to a charity to receive a tax deduction may be seen as engaging in prosocial behavior driven primarily by egoistic rather than altruistic goals. In practice, however, these motivations are complex and often shaped by a combination of both altruistic and self-interested motivations.

As a guiding theory in the field of prosociality, the empathy–altruism hypothesis suggests that empathic concern (i.e., a genuine concern and compassion for the other) plays a key role in producing altruistic motivation (Batson & Shaw, 1991; Batson et al., 1981). Additionally, it has been argued that a central cognitive aspect for facilitating empathy-driven helping is the "perception of similarities between the helper and the target" (Stürmer et al., 2006, p. 944). In the literature, this has been explored by looking at ingroup–outgroup dynamics, wherein ingroup members include the self and those perceived as similar to the self, while outgroup members are regarded as dissimilar or different from both the ingroup (and the self). The empathy–altruism hypothesis has been integrated into narrative persuasion research, particularly through the processes of identification and perceived similarity (Ooms, Hoeks and Jansen, 2019). For example, these processes have been examined in relation to attitudes toward ingroup–outgroup dynamics (e.g., in Igartua & Ramón, 2021; Hoeken, Kolthoff, & Sanders, 2016).

Although the motivations for prosocial behavior are often complex and not always clearly distinguishable, this study defines prosociality as voluntary behavior aimed at promoting the well-being of others or society at large (Eisenberg & Shell, 1986; Batson, 2010; Snyder & Dwyer, 2013). This can include comforting someone in distress, making a monetary donation to a charity, helping a stranger (e.g., bystander intervention), volunteering for an organization or community project, advocating for social justice, or even behavior not directly directed at humans (Otto et al., 2021), such as engaging in pro-environmental action for the benefit of future generations.

Towards a Definition of Prosocial Storytelling

Building on the abovementioned definitions, we consider a narrative as prosocial if it explores or models some types of prosocial themes (e.g., displacement, climate change, public health), issues (e.g., poverty, inequality, stigma) or values (e.g., generosity, cooperation, fairness). The prosocial aspects should not be incidental but serve as central to the story's structure, conflicts, or resolution, involving some type of meaningful relation to the narrative's core elements (e.g., story characters, plot, setting). According to this definition, a prosocial narrative

does not require deliberate prosocial action from its audience. Examples of prosocial narratives include Hollywood films such as The Pursuit of Happyness (2006) and WALL-E (2008), interactive games like Papers, Please (Pope, 2013), as well as virtual reality (VR) experiences such as Notes on Blindness (Archer's Mark, 2016).

By contrast, prosocial storytelling refers to the strategic and intentional use of prosocial narratives to foster, promote, or reinforce prosocial engagement. Such outcomes include not only measurable behavior (e.g. donations of time or money) but also the underlying beliefs, attitudes and intentions (as these are commonly used as indicators of prosocial behavior in empirical research). Beyond the more traditional story-based television advertisements designed to elicit prosocial action, prosocial storytelling is also well exemplified in a web-based interactive narrative SPENT (Urban Ministries of Durham, 2011). In SPENT, users make choices for a protagonist facing homelessness while the experience concludes with an explicit call to donate to a nonprofit organization.

While the affordances of digital media can reinforce specific processes of narrative persuasion to support prosocial goals (e.g., as demonstrated in the case of SPENT), they can likewise be exploited to serve manipulative or harmful ends. This is particularly true as persuasive communication techniques, such as the use of emotional appeals and framing, are employed in both prosocial (e.g., in Brañas-Garza, 2007) and propagandistic contexts (e.g., in Hellman, 2024). Specifically, in digital contexts, the strategic use of narratives has given rise to growing concerns about its potential misuse, such as narratives being used for indoctrination (Neundorf et al., 2024) and supporting the spread of mis- and disinformation (Dahlstrom, 2014; Sadler, 2025). Furthermore, the proliferation of competing narratives in digital environments can make it difficult for audiences to distinguish credible messages from those intended to mislead or manipulate. Consequently, this raises important considerations for prosocial storytelling.

Firstly, although some research has found that making a narrative's persuasive intent explicit may hinder its persuasive outcomes (Moyer-Gusé & Nabi, 2010), in the context of certain prosocial contexts, such as immigration policies, it has little to no measurable impact (Frazer, Robinson & Knobloch-Westerwick, 2021). To be effective in an ethically sound way, prosocial storytelling would benefit from making its underlying goals and intent as transparent as possible.

A second critical consideration for prosocial storytelling is establishing credibility and trust. It has been suggested that "familiar sources are often judged to be more credible than unfamiliar sources" (Metzger & Flanagin, 2013, p. 214; O'Keefe, 1990). This can, for example, involve presenting associations with trusted organizations, institutions or experts. On the other hand, research on storytelling in corporate social responsibility (CSR) demonstrates that narratives can have negative effects when the initiatives are not seen as integral to the organization's core activities or values (Krenz et al., 2025). In this case, audiences may question an organization's motives and interpret the narrative message as manipulative. In prosocial storytelling, clearly signaling genuine motives and showing how a prosocial initiative aligns with an organization's objectives may help reduce skepticism and potentially foster greater trust and credibility.

To summarize, prosocial narratives are narrative artifacts that convey prosocial themes, values or issues that need to be meaningfully integrated into the narrative. Prosocial storytelling, on the other hand, refers to the strategic use of prosocial narratives to foster, promote and or reinforce prosocial attitudes and behaviors. An inherent aspect of prosocial storytelling is its commitment to the responsible and ethically grounded use of narrative. Prosocial storytelling should focus on avoiding harmful stereotypes and ensuring respectful representation of events and characters, whether fictional or based on real-life accounts. The current review focuses on three aspects of prosocial storytelling: the medium, narrative viewpoint, and story ending.

The Interplay Between Medium and Story

A decade ago, entrepreneur and visual artist Chris Milk (2015) described virtual reality as the "ultimate empathy machine", marking a surge of interest in the potential of extended reality (XR) technologies for promoting social change. Although the idea itself has since been met with considerable criticism (e.g., Sora-Domenjó, 2022), it was nevertheless followed by a substantial body of research exploring the affordances of such technologies for enhancing prosociality (Herrera, et al., 2018; Canet & Sánchez-Castillo 2024). For instance, by enhancing the audience's sense of "being there" (presence; Slater, 2009), virtual reality (VR) has been suggested to support perspective-taking, making it possible for audiences to "step into the shoes of another" (Ahn, Bailenson, & Park 2014). Augmented reality (AR), on the other hand, allows users to bridge real-world environments with new information and experiences through the blending of physical and digital worlds (Huang et al., 2024). Although such affordances of emerging technologies hold significant potential, they only become meaningful for the audience when situated within some type of interpretive context (such as a narrative).

Narrative driven interactive applications and experiences that make use of emerging technologies are known

as interactive digital narratives (IDNs). One of the key characteristics of IDNs is that the audience becomes an active participant in the story and has an influence over how the narrative unfolds or concludes (Koenitz, 2023). Although the potential of IDNs for promoting prosociality has received some scholarly attention (e.g., Van Enschot et al., 2023; Koenitz, Roth & Mekler, 2024), many studies examining prosocial media experiences have continued to focus primarily on the technology rather than its relational dynamics with the narrative (Martínez-Cano et al. 2023).

As proposed by Ryan (2004) the medium through which a narrative is conveyed plays an important role in shaping its meaning. Therefore, when the intention is to transport the audience into a refugee camp in Syria, such as in the 360-degree video Clouds Over Sidra (United Nations, 2015), or a remote village in Ukraine as in Displaced (The New York Times, 2016), it becomes equally important to consider what this adds in terms of the narrative's meaning: whose perspective does the audience adopt, and how is that intended to align with the broader narrative context and its goals?

Furthermore, the very affordances that make emerging technologies appealing for prosocial storytelling are also those that may pose challenges for their use in persuasive communication contexts. For example, as users are given greater freedom to navigate the story world and interact with story characters, it also becomes increasingly difficult to maintain a coherent narrative structure (Bruni, et al., 2022; see also the narrative paradox in Louchart & Aylett, 2003). This might, in turn, hinder its persuasive outcomes. To advance our understanding of how the technological affordances of the medium and narrative can interact, this review will offer a more comprehensive perspective, with a specific focus on prosocial storytelling.

Narrative Viewpoint in Prosocial Storytelling

Narrative viewpoint refers to the "vantage point" from which story events are conveyed, a key feature through which audiences can access characters' inner worlds and experience story events (Van Krieken & Sanders, 2021). In narrative persuasion research, the strategic use of narrative viewpoint has been demonstrated to promote the adoption of story-consistent beliefs, increase empathy toward and identification with story characters (Cohen, 2001; De Graaf et al., 2012, 2016). Different types of narrative viewpoints include first-person, (e.g.,"I opened the letter"), second person (e.g., "You opened the letter") or third-person accounts (e.g., "She opened the letter"). The treatment of narrative viewpoint is shaped by the medium through which the narrative is told (Van Krieken, 2018). For example, while textual narratives shift between conveying internal thoughts and external actions of characters through language, visual media can make use of camera angles, editing and voice-overs. In this regard, emerging media such as virtual reality (VR) offer unique opportunities for simulating first-person viewpoints, allowing audiences to make choices as characters within the story world.

Some research has examined the impact of viewpoint on prosocial outcomes (Christy, 2017; Chen, Dong, & Wang, 2023), however, little attention has been given to how it has been used across different studies and prosocial contexts. Chen et al. (2023) highlight the congruence between similarity and perspective. They note that in some cases, "a similar character may possibly lead to an urge to disassociate oneself from the stigmatized character," (p. 74) and propose "adopting a third-person perspective as a means to avoid possible negative emotions and backfiring effect from the stigmatization" (p. 75). In this way, examining the distribution and frequency of narrative viewpoint in existing research can highlight which perspectives are most frequently employed across different contexts. Moreover, as prosocial storytelling continues to explore emerging media formats, where audience perspective is often embedded into the medium itself (such as through first person VR experiences), the role of narrative viewpoint becomes even more critical to study.

Does it Matter How the Story Ends?

Mentions of narrative resolution can be traced back to foundational narrative theories (Cutting, 2016), such as Aristotle's traditional three-part framework in Poetics (ca. 335 B.C.E.) and the Freytag's triangle (MacEwan, 1900). As a structural element of narrative, resolution typically follows the story's climax or falling action and therefore represents the stage during which the central conflict is brought to some type of a conclusion. Thus, narrative resolution is inherently linked to how a story ends, whether the ending is perceived as positive, negative, or ambiguous.

Story ending valence has been suggested as "a component common to all stories" (Hamby & Brinberg, 2016, p. 498). Research that has examined resolution and different types of story endings in persuasive contexts has resulted in mixed findings. Orazi, Lei and Bove (2021) examined narratives targeting drunk driving and excessive sugar consumption, and found that disclosing, rather than withholding negative endings increased the adoption of precautionary behaviors. In a drug prevention context, positive narrative endings were found to be more engaging than negative ones (Banerjee & Greene, 2012). Similarly, in cautionary personal health stories, positive endings were reported to be more effective in enhancing story-consistent beliefs (Hamby & Brinberg, 2016). In the

prosocial domain, Paravati et al. (2022) found no differential effect of positive versus negative endings on attitudes toward refugees. Although current findings remain inconclusive, existing evidence suggests that story resolution, narrative closure, and valence may play an important role in shaping a narrative's persuasive effects.

Research Questions

Building on the initial set of study objectives, the current research has two primary aims: (1) to describe the methodological and design choices made in existing studies, and (2) to provide guidance for future research.

To address the first aim, two core research questions are posed:

RQ1: How can empirical studies investigating narrative persuasion in prosocial storytelling be characterized?

RQ2: How have prosocial storytelling narratives been designed in such studies?

To attain the second aim, the following research question is formulated:

RQ3: How can the insights gained from the design choices inform future research and the methodological advancement of studies focusing on prosocial storytelling?

METHODS

A two-phase multi-method study was designed, combining a systematic literature review (SLR) with a content analysis of the stimuli used in the studies. The systematic review facilitated the identification, retrieval, and synthesis of documented study methods and research contexts, whereas the content analysis provided a structured approach for organizing, examining and interpreting narratives used in the retrieved studies (Bengtsson, 2016). For the systematic literature review (SLR), the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework was used. PRISMA is designed to improve the quality and transparency of systematic reviews and meta-analyses, and is widely applied in various fields to strengthen the reporting of review methods and findings (Sohrabi et al., 2021). The framework outlines the key steps in conducting an SLR, including searching, selecting, evaluating, including and excluding studies for the review, and offers guidelines on how to report these steps. The steps undertaken in the current study are discussed below (Page et al., 2021).

Literature Search

Potential publications were retrieved using terms related to narrative forms ("narrative", "story", "interactive narrative"), psychological and behavioral constructs ("behavior*", "attitude*", "belief*", "persuasi*"), prosocial concepts ("helping", "prosocial*", "empath*", "altruis*", "generos*", "cooperat*"), and indicators of empirical research ("empirical", "effect*", "test", "experiment*").

The primary database for the literature search was Web of Science (WOS), which has a broad coverage and is frequently used in systematic reviews (Aghaei Chadegani et al., 2013; Paul & Barari, 2021). The search was conducted in May 2024 and was limited to peer-reviewed journal articles in English, published between 2009-2024. We chose to include studies from 2009 onward, as our WOS search indicated a gradual increase in research exploring narrative persuasion in prosocially oriented contexts from that year onward, alongside growing attention to digital and emerging media. Moreover, a 15-year timespan is consistent with the approach taken in several other systematic literature reviews (e.g., in Panigrahy & Verma, 2024; Georgiou, et al., 2023).

Following the initial WOS search, the search was extended to additional academic databases deemed relevant, including Ovid PsycINFO APA; Scopus; and EBSCO (Communication Abstracts, Library, Information Science & Technology Abstracts, MLA Directory of Periodicals, MLA International Bibliography), in which the same set of keywords were adapted to fit the specific database search requirements. In total, 1139 records were identified through the database searches.

Study Selection Process

Out of the 1139 records, 263 duplicates were removed, and 130 were excluded based on titles that were found to be outside the scope of the study. The abstracts of the remaining 743 records were then screened according to the broader eligibility criteria (see Figure 1), resulting in 112 records that were found eligible for full-text review (including 15 additional records identified through snowballing). Of these, 110 reports were successfully retrieved.

In the subsequent phase, refined criteria addressing both RQ1 (systematic review) and RQ2 (content analysis) were applied. To be eligible for inclusion, narrative stimuli had to be accessible and presented in the English language (if originally in another language they had to be accompanied by an English translation). Objective criteria, i.e. stimuli language or accessibility, were assessed directly and did not require multiple coders. Two

independent coders applied the refined eligibility criteria, using standardized definitions (see Refined SR Inclusion Criteria in Figure 1) to evaluate both report-level characteristics (prosocial focus, presence of persuasive outcomes) and content-related elements (whether the stimuli met the definition of 'narrative'). Based on coders' assessment, 12 studies were excluded based on report-level conceptual criteria, including limited or no prosocial focus (n=9) and absence of persuasive outcome measures (n=3). In 9 cases, the stimuli did not meet the established definition of 'narrative' (n=9).

If narrative stimuli were not directly accessible from the article (such as through an external link or appendix), at least one author was contacted. Studies that explicitly used copyrighted, non-public materials (e.g., original or adapted content from Netflix/Amazon, published book chapters) were not pursued and were excluded (n=9). Stimuli from 38 studies were initially deemed inaccessible. From these studies, at least one author was contacted, after which 17 authors provided access to the requested materials. At this stage, some studies were also excluded due to expired stimuli links, or formats, e.g., expired online games, interactive applications in Unity or VR content unavailable in 2D (n=8); authors' loss of stimuli (n=6), or no author response (n=21). In some cases, the stimuli were not in the English language (n=10). Lastly, one study was detected as a conference paper and excluded (n=1). This resulted in 34 studies being included in the review, from which 60 unique narratives were derived for the subsequent content analysis (see Content Analysis details in the sub-section below).

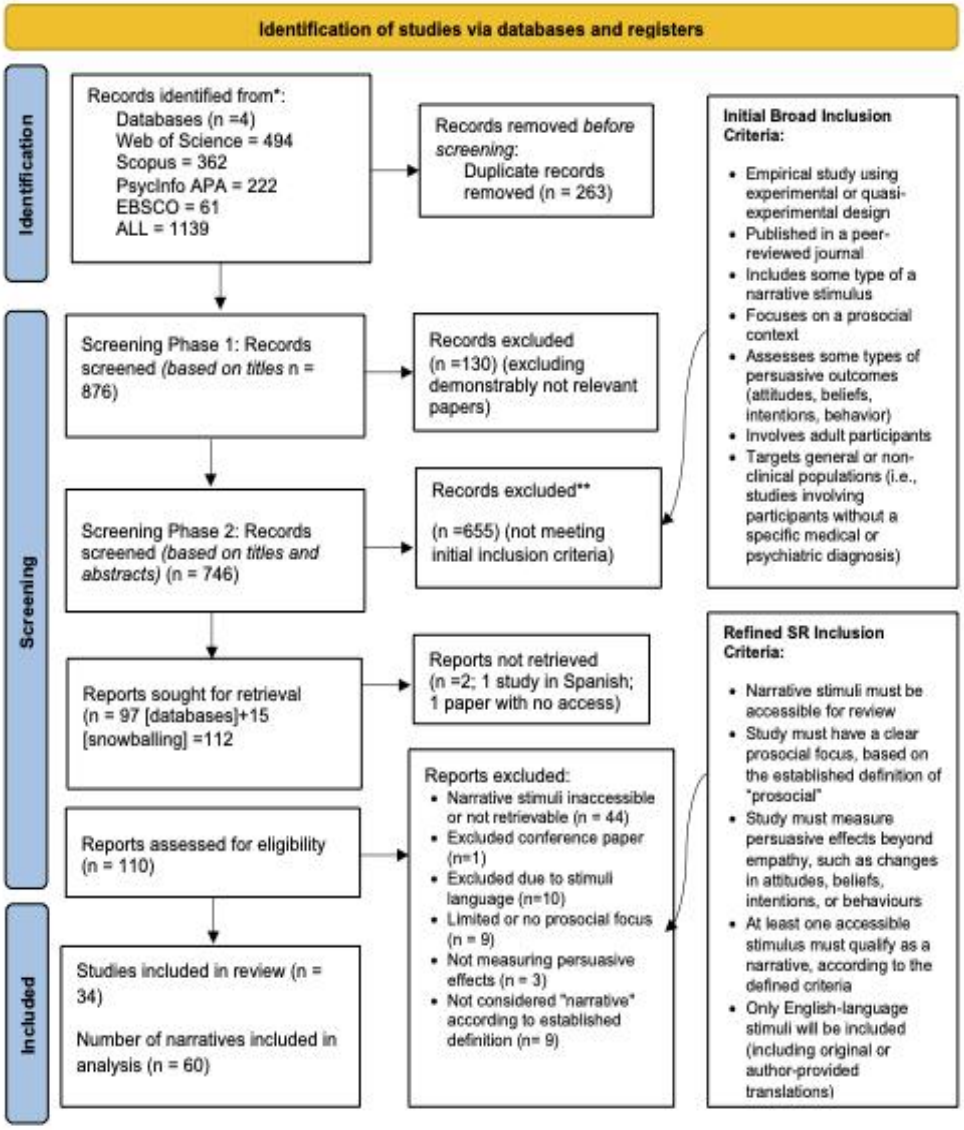

Figure 1. PRISMA flow diagram. Note. Adapted from Page, et al. (2021).

Data Extraction and Coding Process for Systematic Review of Studies

The coding process for the systematic review of studies and the content analysis of their narrative stimuli were conducted separately. In the analysis of the studies, each individual study constituted the unit of analysis, and the variables extracted and coded were directly informed by the sub-components of RQ1. These included: (RQ1a) experimental manipulations, (RQ1b) study design (e.g. cross-sectional, longitudinal, between/within subjects.), (RQ1c) assessment methods (self-report, behavioral, observational), (RQ1d) prosocial outcomes measures (beliefs, attitudes, behavior), (RQ1e) media or medium (text, video, interactive, immersive formats; see Appendix A). We employed a combined data extraction and coding strategy to distinguish between elements that allowed direct extraction and those requiring interpretive coding. The variables directly extracted from the 34 studies included formal publication details (article title, journal, year of publication, and study focus), methodological descriptors (study design [RQ1b], assessment methods [RQ1c], media and format [RQ1e]). For the other two sub-components, RQ1a (experimental manipulations) and RQ1d (prosocial outcomes measures), interpretive coding was applied by a single coder. The variables for both sub-components were first extracted verbatim from each study and subsequently organized into broader categories. In cases where a study reported multiple experimental designs or sub-studies these were noted as within a single coding entry.

The response options for the RQ1a (experimental manipulations) and RQ1d (prosocial outcomes measures), were developed inductively based on patterns observed across the sample (see Table 1). The options for RQ1a included: (1) Narrative versus non-narrative formats, (2) Narrative features, (3) Distinct narratives, (4) Narrative format/modality. Presence of a control condition (i.e., an expository [non-narrative] message) was additionally coded under the category of message type. Manipulations that did not fit any of the abovementioned categories were marked as "Other" (e.g., manipulations of engagement such as writing versus reading a narrative).

Table 1. RQ1a Experimental Manipulations Variables and Examples

RQ1a: Experimental Manipulation Variables	Examples from Data
1) Narrative vs. non-narrative comparisons	Expository text about homelessness vs. narrative text about someone experiencing homelessness.
2) Narrative features	The same narrative told from a first vs. third-person perspective.
2) Distinct narratives	A story about traffic accidents vs. a story about Dutch people's holidays.
4) Narrative format/modality	A narrative presented as an interactive/immersive story vs. a non-interactive/non-immersive story.

For RQ1d the options were: (1) Empathetic engagement: studies measuring some form of affective or cognitive engagement with one's own or others' emotional states and/or experiences (Batson & Shaw, 1991); (2) Beliefs: studies that reflected a type of cognitive judgment relating to some perceived or accepted truth or idea (subjective or objective; Schwitzgebel, 2006; Connors & Halligan, 2015); (3) Attitudes: studies involving some type of an evaluative component (Eagly & Chaiken, 1993; Connors & Halligan, 2015); (4) Intentions: studies measuring willingness or motivations to engage in some type of future prosocial actions (Conner and Norman, 2022); (5) Behavior: studies measuring concrete, action-based outcomes; (6) Policy support: studies measuring outcomes reflecting structural or institutional level agreement with prosocial policies, programs, or campaigns (see **Table 2**).

Table 2. RQ1d Conceptual Groupings and Examples of Prosocial Outcomes Variables

RQ1d: Prosocial outcomes measures	Examples from Data
1) Empathetic engagement	Meaningful affect, altruism, empathetic concern, empathetic parasocial interaction.
2) Beliefs	Issue involvement, perceived behavioral control, efficacy, perceived norms, perceived severity, responsibility.

RQ1d: Prosocial outcomes measures	Examples from Data
3) Attitudes	Stigma, evaluation, approval/disapproval, types of evaluation (good/bad, like /dislike).
4) Intentions	Intentions to donate, help, seek out information, or participate in future engagement.
5) Behavior	Money donated to a charity or organization, helping behavior.
6) Policy support	Support for more specific interventions or policies.

Data Extraction and Coding Process for Content Analysis

For the content analysis addressing the second research question (RQ2), each unique narrative identified across the 34 articles (n=60) served as the unit of analysis. These narratives were examined in terms of prosocial theme (RQ2a), narrative perspective (RQ2b), and story ending valence (RQ2c; see **Table 3**).

Table 3. RQ2 Coding Framework for Study Review Variables

RQ	Focus	Coding Description	Coding Variables
RQ2a	Prosocial theme	The predominant theme in the narrative.	Health; Moral Action; Social Justice; Stories of Displacement; Environmental Narratives; Multiple/Overlapping; N/A (see specific descriptions of themes in Table 4)
RQ2b	Narrative perspective	The predominant perspective through which the story is being told.	1st; 2nd; 3rd person; Mixed; N/A
RQ2f	Story ending	Describes how the story predominantly concludes in terms of its valence.	Positive; Negative/tragic; Neutral; Open-ended; N/A

Whenever multiple narratives were presented across different experimental manipulations within a single study, coders assessed whether these narratives should be considered as variations of the same narrative or as distinct, standalone narratives, (i.e. the narrative manipulations that resulted in significant changes to the characters, plot, or events of the narrative). In three instances, the same narrative stimulus was used across multiple studies, so these were counted only once in the sample (e.g., Ma, 2020, and Breves 2020; Muralidharan & Kim, 2020, and Kim & Muralidharan, 2019; Oh et al., 2018, and Oh, Lim, & Hwang, 2020). Unrelated narrative controls were excluded to avoid thematic inconsistencies (e.g., Schneider-Mayerson et al., 2020). Narratives using VR or immersive 360° video with a head-mounted display (HMD) were coded using the available desktop-accessible versions (videos of the content in 2D or as 360° videos navigable via cursor). Fully immersive HMD-based experiences, i.e. those requiring an HMD for viewing, were excluded due to accessibility constraints (same applied to interactive narratives that required specific software to run).

For coding the RQ2 subcomponents (RQ2a, RQ2b, RQ2c), a codebook was developed describing each subcomponent, with examples provided where relevant (for Codebook see Appendix B). Each narrative was coded independently by two coders to ensure reliability; in the case of discrepancies or ambiguities, a third coder was consulted. The coding scheme drew on established categories from the literature for perspective and story ending valence, whereas prosocial themes were developed inductively based on a pre-analysis of a smaller subsample of the narratives (see **Table 4**).

Table 4. Descriptions of Prosocial Themes

Theme	Description
Health	Narratives centered on various health-related issues/challenges and medical experiences, and/or broader impact on family, communities, and healthcare systems. For example, themes of prevention, access to care, and emotional and psychological effects.
Moral Action	Narratives where moral dilemmas and personal responsibility are central to the storyline; stories feature characters making difficult decisions to act (sometimes at personal cost). For example, characters facing situations where they must determine the right course of action in a challenging or morally complex contexts.
Social Justice	Narratives that explore experiences of individuals and/or communities facing systemic inequities, fighting for equal rights, recognition, and opportunities. For example, oppression faced by specific groups and challenges they encounter in their fight for justice.
Stories of Displacement	Narratives that deal with displacement, refugee experiences, and humanitarian issues, and explore the emotional, physical, and psychological toll of leaving one's homeland due to conflict, persecution, or disaster.
Environmental Narratives	Focus on environmental issues such as climate change, resource depletion, and environmental justice. For example, stories focusing on individual and collective responsibility to protect the planet and those most impacted by environmental harm.

In cases where it was difficult to clearly fit a single category, coders were instructed to select the most prominent or central option or to use the other categories (e.g., "Mixed", "N/A"). For themes, coders began by identifying the theme most central to the narrative's progression and meaning. If multiple themes were present, they prioritized the one that appeared most frequently or had the greatest influence.

We first calculated intercoder reliability (ICR) values in SPSS for all initial variables using Cohen's kappa and interpreted them based on commonly used benchmarks (McHugh, 2012): values between 0–0.20 were considered none; 0.21–0.39, minimal; 0.40–0.59, weak; 0.60–0.79, moderate; 0.80–0.90, strong; and above 0.90, almost perfect agreement (see **Table 5**).

Table 5. Intercoder Reliability Statistics

Variable	% Agreement	κ	p	Interpretation
Narrative perspective	86.67	.770	< .001	Moderate agreement
Presence of protagonist	88.33	.573	< .001	Weak agreement
Protagonist role	66.67	.510	< .001	Weak agreement
Presence of prosocial message	91.67	.412	< .001	Weak agreement
Story ending valence I	61.67	.485	< .001	Weak agreement
Story ending valence II (combined: neutral and open-ended)	76.67	.641	< .001	Moderate agreement
Prosocial themes	71.67	.627	< .001	Moderate agreement

Note. % Agreement = percentage of matching coding decisions between coders. κ = Cohen's kappa.

Variables that did not reach an acceptable level of agreement (κ < 0.60, McHugh, 2012) were excluded from further analysis. For the story ending valence, the initial intercoder reliability (κ) was low 0.485, thus indicating weak agreement. Upon discussion among coders, it was determined that the "neutral" and "open-ended categories" were conceptually overlapping and were collapsed into a single category. The results were considered only for the variables that demonstrated sufficient reliability, i.e., narrative perspective (0.770), story ending valence (with combined "open-ended" and "neutral" categories, 0.641), and themes (0.627).

All materials related to the narrative content analysis and systematic review, including the coding manual, coded datasets, intercoder reliability results, list of included studies, and screening criteria, are available on the

Open Science Framework (OSF): https://osf.io/qmsr2/overview?view_only=95d18c7f00634b19bdaced4dde7723a3

RESULTS

The findings are organized according to the study's two primary research aims: (1) to describe the methodological and design choices made in existing studies, and (2) to provide guidance for future research. First, we present the methodological approaches and experimental design features employed in the 34 studies reviewed (RQ1). Second, we report the findings from the content analysis of unique narratives identified and used within these studies (n=60; RQ2). The results are structured according to the research questions (RQ1 and RQ2) and their subcomponents, with labels (e.g., RQ1a, RQ1b) used throughout to describe the corresponding findings.

Experimental Manipulations

The narrative manipulations (RQ1a) were found to focus on four key aspects: distinctive narrative comparisons (13.7%), delivery medium or format (21.5%), narrative vs. non-narrative comparisons (27.4%) and narrative features (33.3%, see Table 6). Whereas narrative features involved variations within the same narrative, distinct narratives compared two or more narratives. In several studies, multiple manipulations were used, for instance, studies employing an expository text alongside either a single or multiple narratives. Two studies were classified under "Other", as one lacked an experimental manipulation (Barraza et al., 2015), and the other compared reading and writing tasks (Bientzle et al., 2024; 3.9%).

Table 6. Experimental Manipulations

Type of Experimental Manipulation	No. of Studies
Narrative features	17
Narrative vs. non-narrative comparisons	14
Narrative format / medium	11
Distinct narratives	7
Other	2

Narrative Features

17 studies included manipulations focusing on variations of features within a single narrative (for supplementary data and examples, see Appendix C **Table C1**). Character related features, character similarity (n=3) and character traits (n=3) were most frequently examined. Pre-narrative exposure (n=6) included studies that sought to influence participants' cognitive or emotional state before narrative engagement. Narrative framing, vicarious reinforcement and agency, were all equally explored in three studies each (n=3). The least studied variables were story ending, narrative structure, and narrative perspective and focalization (degree of access to a character's inner thoughts and feelings; n=1 for each variable).

Narrative Vs. Non-Narrative Comparisons

14 studies included narrative and non-narrative comparisons. Most were implemented alongside other experimental manipulations while six studies examined this as the sole variable. For instance, Wang, Murphy, & Walter (2022) examined the role of vicarious reinforcement as a narrative feature, comparing two narrative versions (one incorporating vicarious reinforcement and one without) but also included a non-narrative informative article on the same subject. Non-narrative messages were primarily in the form of statistical or expository texts, while in one case, a study used an immersive environment without narrative content (i.e., an Immersive Virtual Reality waiting room; Martingano, et al., 2023).

Distinct Narratives

Seven studies used two or more distinct narratives. In half of the reviewed studies in this category, the comparison narrative(s) addressed the same issue, topic or theme but varied in characters, setting or general context (Andrews, et al., 2022; Pressgrove et al., 2021; Tamul & Hotter 2019). In the other half, the additional narrative was thematically unrelated (Bakker et al., 2019; Malecki, Pawlowski, & Sorokowski, 2016; Tao et al.,

2024). Schneider-Mayerson et al., (2020) combined both approaches by presenting two climate change narratives alongside a non-climate-related narrative used as a neutral control.

Narrative Format and Medium

A total of 11 studies manipulated the format or medium through which narratives were presented. One study compared video to text (Rickard et al., 2021). Five studies compared Virtual Reality (VR) to flat 360-degree video or flat video (Breves, 2020; Bujić et al., 2020; Pressgrove et al., 2021; Ma, 2020; Kandaurova, & Lee, 2019). In addition, Bujic et al. (2020) incorporated a text condition comprising an online article with a transcript of the narration, supplemented by stills extracted from the corresponding video version. One study uniquely contrasted VR with an audiobook narrative format as control (Martingano et al., 2023). Four studies presented narratives using an interactive, primarily text-based format. For example, in one study, participants assumed the role of a person experiencing homelessness within a narrative (Steinemann et al., 2017) while in another, they made decisions on how a character should respond to challenges as a transgender individual, undocumented immigrant, or Muslim teenager (Walter, Murphy & Gillig, 2018). In others, participants made choices within an obesity-related narrative (Oh et al., 2018; Oh et al., 2020).

Study Design, Measures and Prosocial Outcomes

Across the 34 studies, most (73.5%, n=25) relied exclusively on self-report measures (RQ1c), i.e. participants reporting their attitudes, beliefs, or behavioral intentions by filling out questionnaires or surveys. A smaller subset employed a combination of methods, such as integrating observational or physiological data (5.8%, n=2), pairing self-report measures with donation behavior (e.g. donation boxes or online contributions) (14.7%, n=5), or using a dictator game (2.9%, n=1). Another study utilized a simulated context in Immersive Virtual Reality (IVR) to assess behavior following narrative exposure (n=1).

Most studies examined multiple prosocial outcomes (RQ1d), while actual prosocial behavior (8.8%, n=9) was the least examined (see Table 7). The most commonly measured outcome was some form of empathic engagement (23.5%, n=24), including constructs such as meaningful affect, altruism, empathic concern, and empathic parasocial interaction. Attitudes (19.6%, n=20) and intentions (19.6%, n=20) were equally common outcome measures, followed closely by beliefs (18.6%, n=19). Policy support was explored less frequently (9.8%, n=10).

Table 7. RQ1d Results Measured Prosocial Outcomes

Outcome Type	No. of Studies	Examples from Data
Beliefs	19	In Oh et al. (2020), beliefs were measured by assessing participants' perceptions of the likelihood that an obese individual would experience major consequences of obesity (e.g., social stigma, diabetes, hypertension). Participants rated these likelihoods using a 7-point Likert scale.
Attitudes	20	In Rickard et al. (2021), attitudes were measured through participants' affective responses. Negative emotions (anxious, angry, worried, guilty, sad) were averaged to create a "Negative Emotion" score, while four positive emotions (hopeful, inspired, encouraged, optimistic) were averaged into a "Positive Emotion" score.
Intentions	20	In Kaczorowska et al. (2023), intentions were measured through participants' stated willingness to donate, volunteer, or otherwise support charitable organizations.
Behavior	9	In Bakker et al. (2019), participants' helping and information-seeking behaviors were recorded before and after a crisis communication during an Immersive VR simulated accident.
Empathic Engagement	24	In Martingano et al. (2024), participants completed two self-report measures of emotional empathy (Empathic Adjectives, Emotional Empathy Scale), two behavioral measures of cognitive empathy (Empathic Accuracy Task, UCDSEE), and one self-report measure of cognitive empathy (Cognitive Empathy Scale), as part of a larger test battery.

Outcome Type	No. of Studies	Examples from Data
Policy Support	10	In Tukachinsky et al. (2019), participants indicated the extent to which they favored or opposed five policies aimed at assisting individuals struggling with opioid addiction. These were closely tied to the experiences of the out-group character in the narrative.

Out of 34 studies, 31 (91.2%) assessed outcomes shortly after the intervention (RQ1b). Two studies incorporated delayed post-tests (5.8%), with one measuring follow-up effects 10 days after the intervention (Martingano et al., 2023) and the other at a one-month interval (Schneider-Mayerson et al., 2020). In one case, the experiment was replicated three years later (Smith, Mabulla, & Apicella, 2023; 2.9%).

Medium

The media used across the 34 studies (RQ1e) revealed that 55.8% (n=19) exclusively employed text. Virtual reality (VR) combinations, such as additional use of video and audio, were employed in 17.6% of studies (n=6). Interactive formats or interactive combinations (e.g., interactive text vs. noninteractive text) appeared in 11.7% of studies (n=4), as did other multimodal combinations (e.g., text and image; video and text). One study (2.9%) used video as the sole narrative medium.

Content Analysis

The second research question (RQ2) and its supporting sub-components (Prosocial theme [RQ2a], Narrative perspective [RQ2b], Story ending [RQ2c]) concerned the various characteristics of the 60 distinct narratives extracted from the 34 included studies.

Prosocial Themes

From the five pre-established categories, the most frequently identified theme was Health (33.3%, n = 20). The theme was followed by Social Justice (20%, n = 12), Moral Action (16.7%, n = 10), Stories of Displacement (15%, n = 9) and Environmental Narratives (13.3%, n = 8). In one case (1.7%), an overlapping theme was coded (see **Table 8**).

Table 8. RQ2a Prosocial Themes Results

Theme	No. of Studies	Example(s) narratives
Health	20	In Andrews et al. (2022), text-based narrative about a firefighter and emergency medical technician's experiences during the COVID-19 pandemic, including concerns for his family's safety while highlighting the risks for frontline workers.
Social Justice	12	In Kaczorowska et al. (2024), a text-based narrative about a man's journey through childhood trauma, depression, and homelessness, and how support from a local social organization helped him rebuild his life.
Moral Action	10	In Malecki, Pawlowski & Sorokowski (2016), a text-based narrative about a wild capuchin monkey, who experiences abuse, cruelty, and exploitation by humans.
Stories of Displacement	9	In Martingano et al. (2023), The Displaced, a 360-degree video by The New York Times, portrays three children from different war-zones around the world as they share their experiences of displacement.
Environmental Narratives	8	In Kandaurova et al. (2019), A Journey to the Arctic, a Greenpeace 360-degree video, follows the ship Arctic Sunrise through the high Arctic, and highlights ways in which the region has come under threat from global warming.
Overlapping Themes (Health and Stories of Displacement)	1	In Breves (2020), Under the Net, a Discovery VR 360-degree video, is about a 11-year-old Congolese girl living in a Tanzanian refugee camp, where her family struggles daily without protection from malaria-carrying mosquitoes until receiving bed nets, treatment, and a new home.

Narrative Perspective

In the analysis of narrative perspective third-person perspective appeared as the most common (48.3%, n=29), followed closely by first-person perspective (46.7%, n=28). Second-person perspective was much less

frequent (3.3%, n=2), while a mixed perspective appeared in only one study (1.7%, n=1).

Story ending valence

The story ending captured how each narrative concluded in terms of its ending valence. Initially, narrative endings were coded into five categories: positive, negative/tragic, neutral, open-ended, and N/A. The "neutral" and "open-ended "categories were collapsed into one category after coder discussions revealed substantial overlap. Subsequently, the combined "open-ended" and "neutral" category appeared in 26 narratives (43.3%). Positive endings were coded 22 times (36.7%), and negative endings 12 times (20%).

DISCUSSION

The current review examined extant research on prosocial storytelling with the goal of informing and guiding future work in the field. The results suggest that in line with developments in more applied contexts (e.g. Meta's VR for Good, n.d; Games for Change, n.d.; Emblematic Group's XR productions, n.d.), experimental research on prosocial storytelling is increasingly exploring new media and emerging technologies. Even so, many research projects still rely on variations of traditional text-based narratives. Furthermore, studies predominantly focus on short-term psychological effects and less on actual prosocial behaviors, particularly those measured over time. Examination of study stimuli reveals that narratives are characterized by distinct prosocial themes and a balanced use of first- and third-person perspectives, while story ending valence varies across the narratives. The findings give rise to several specific recommendations for both researchers and practitioners regarding design and future research in prosocial storytelling, which will be outlined in the remainder of the discussion.

Prosocial Storytelling Across Media

In recent years, numerous charity campaigns and awareness initiatives have begun to explore possibilities around emerging media and technologies, such as virtual reality, mixed and augmented reality. Although an increasing number of empirical studies on prosocial storytelling reflect this development (e.g., Breves, 2020; Pressgrove & Bowman, 2021; Martingano et al., 2023; Steinemann et al., 2017), we found that many continue to rely primarily on traditional text-based stimuli. This is in line with findings from a previous review study (Dahlstrom et al., 2017) and thus suggests a bias in narrative persuasion studies towards a specific mode of communication. Although traditional text-based narratives may offer practical advantages (e.g., ease of manipulation, accessibility), experimental research exploring formats beyond text is necessary to advance our understanding of the effects of prosocial storytelling.

As different media allow for emphasizing distinct aspects of a narrative's meaning (Ryan, 2004), the affordances of such new technologies may in many ways benefit prosocial storytelling. Interactive digital narratives (IDNs), including narrative-driven extended reality applications, can allow audiences to explore different narrative paths, make decisions and experience how their choices may influence the unfolding of events in the story. In this way, IDNs provide an environment in which users' decisions or actions, and their consequences can be "played out" before being applied in real-world contexts. For example, in VR, immersive storyworlds can offer more contextualized and embodied learning environments wherein users can experience and directly take part in prosocial actions. Additionally, IDNs can support developing a better understanding of the complexity surrounding societal issues, which, in turn, can also help encourage deeper reflection on both individual and collective roles in fostering prosocial change. However, not all narratives should be assumed to be more engaging or persuasive simply because they are presented in a specific medium, or because they are interactive or immersive.

Our review highlights a common tendency in prosocial storytelling research to, for example, compare immersive and non-immersive formats (e.g., Bujic et al., 2020) or interactive and non-interactive narrative structures (e.g., Oh et al., 2018), often using the same narrative content across conditions. As the focus in previous research with respect to emerging media has also largely been on the medium and its affordances, the specific narrative characteristics and persuasive impact of such prosocial narratives are not fully understood. There is a need for research to attend more closely to the narrative itself, a point also previously noted in a systematic review by Martínez-Cano et al. (2023), which examined VR audiovisual content in prosocial contexts.

Insights for Guiding Future Experimental Work in Prosocial Storytelling

The review found that among studies examining narrative features, experimental manipulations of story characters were most frequent, including variations in character similarity and character traits. This aligns with established theory and evidence in narrative persuasion research, which proposes that perceived similarity with characters can foster identification through which audiences are more likely to adopt story-consistent beliefs (De

Graaf et al, 2012; Van Krieken, Hoeken, & Sanders, 2017).

As a wide array of prosocial topics deal with various in-group and out-group dynamics (e.g., refugees, stigmatized populations, minority groups), similarity and identification may be regarded as central to prosocial storytelling research. For example, Igartua, Wojcieszak, and Kim (2019) manipulated the perceived level of cultural similarity between the story's protagonist, who was an immigrant and the audience, to examine its effect on identification, which was hypothesized to influence attitudes and behavioral intentions toward immigrants. Some research has suggested that in some cases, psychological similarity (e.g. character's personality traits) can be more influential than objective similarity (e.g. demographics; Cohen, 2006; Hoeken, Kolthoff & Sanders, 2016). This was also demonstrated in the meta-analysis by Huang, Fu and Sun (2023), which found that psychological similarity had a greater impact on identification than manipulations of objective similarity. However, as was also noted by the authors (Huang et al., 2023), no studies have directly compared objective and psychological similarity within the same design, and none, to our knowledge, have done so in the context of prosocial storytelling. Notably, among the studies that focused on story characters, only one explored narrative perspective by having participants read a story from the viewpoint of either an individual suffering from addiction or a supportive friend (Tukachinsky et al., 2019). This is somewhat surprising, as narrative viewpoint has been proposed as a particularly powerful tool and, in some cases, demonstrated to be an even stronger predictor of identification than similarity (Hoeken et al., 2016).

Another relevant consideration for prosocial storytelling is the use of vicarious reinforcement. Vicarious reinforcement is concerned with how audiences can learn by observing the story characters' actions, story events, and the observable consequences of these actions. More recently, vicarious reinforcement has been studied in the context of narrative persuasion by Andreeva and Green (2025). In their study, they investigated how the modeling of self-compassion in a narrative influences readers' own self-compassion. This was done by having the main character respond to personal misfortunes in either a self-critical or a self-compassionate manner. Although such modeling of desired attitudes or behaviors is well grounded in a number of theories (e.g. Social Cognitive Theory, Bandura, 1986), studies examining this in the prosocial storytelling context remain surprisingly limited. Moreover, since immersive environments in virtual reality have been demonstrated as having high potential in social cognitive therapy (Lindner, 2021), adopting such emerging technologies may also prove useful for supporting narrative representations of vicarious reinforcement for prosocial storytelling (Ahn, et al., 2014).

Narrative engagement encompasses not only the experience during the story, but also the cognitive and emotional processes that occur before and after (Mar, et al., 2010). In our review, several studies employed some type of pre-narrative exposure, including instructional prompts and other methodological tools to influence audience engagement. In some studies, researchers examined whether presenting the narrative as fiction or nonfiction influenced its effects (Fitzgerald et al., 2020; Petterson, et al., 2022). In others, social inclusion or exclusion was manipulated as/by pre-narrative exposure, for example using the Cyberball paradigm (Williams, 2007), i.e. virtual ball-tossing game used to study social exclusion (e.g., Kandaurova & Lee, 2019). However, while such experimental paradigms that simulate social exclusion are well established in social psychology, their integration into prosocial storytelling research remains limited. In this way, prosocial storytelling could benefit from integrating methods from adjacent fields, as these may offer valuable tools for shaping pre-narrative audience states and for understanding how such states influence engagement with prosocial narratives.

Similar to the influence of pre-narrative conditions, post-narrative aspects, such as calls to prosocial action or appeals for donations, may also affect a narrative's persuasive effects. Although post-narrative aspects, such as intervention messages, have received greater attention in health communication research (e.g., Moyer‐ Gusé, Jain, & Chung, 2012), they remain underexplored in prosocial storytelling.

Future Research Should Assess Actual Prosocial Behavior Over Time

Our review indicated that research on prosocial storytelling focuses on internal psychological responses (e.g. various forms of empathic engagement, attitudes, intentions), and that it mostly relies on self-report measures. Only a small number of studies explicitly examined actual prosocial behavior, wherein charitable donations emerged as the most frequently used measure for this. This limited attention to behavior can be seen as a significant limitation in current research – mirroring remarks that have been made for the disciplines of psychology and communication in general (Oschatz & Marker, 2020; Baumeister, Vohs, & Funder, 2007). The idea that what people think, feel or say may not always translate into what they do, has been well addressed both by the attitude-behavior gap (Wicker, 1969) as well as the intention-behavior gap (Sheeran & Webb, 2016).

Baumeister et al. (2007) acknowledge that behavioral observation may not always be feasible; however, when it is, it should be considered in order to strengthen the validity of psychological research. Within the prosocial context, several studies in our review demonstrated that prosocial behavior is most frequently operationalized through looking at donations while alternative strategies have remained unexplored. For instance, future research

could consider emerging media as avenues for capturing behavioral data in ways that can remain methodologically valid and ecologically relevant. This may include tracking user activity within interactive narrative scenarios, for instance, on how users navigate the story world or whether they make prosocial decisions (e.g., helping not helping a virtual stranger), or using immersive virtual reality scenarios after narrative exposure which can simulate real-world situations (e.g., Bakker et al., 2019).

Furthermore, most studies measured outcomes shortly after the intervention, with only few incorporating delayed post-tests or longitudinal designs. This scarcity of studies examining long-term persuasive effects of narratives has also been addressed in previous research (Oschatz & Marker, 2020). In our review, some studies that did include delayed follow-up assessments found that empathy gains declined after ten days (Martingano et al., 2023), while others found that the small but significant effects on beliefs and attitudes observed immediately after exposure, were no longer statistically significant at a one-month follow-up (Schneider-Mayerson et al., 2020). These insights suggest that greater attention should be given to investigating how both psychological and behavioral prosocial outcomes persist over time, and whether single media exposure is sufficient.

Bridging Narrative Content Characteristics With Prosocial Themes and Goals

The review identified five primary themes in the studies' narrative content, thus offering insight into the types of prosocial issues most represented in prosocial storytelling research. It also revealed that the narratives mostly focus on health-related themes. One possible explanation for this is that much work on narrative persuasion has been conducted within health communication research, which also often overlaps with prosocial issues (e.g. public health, health stigma).

The second-person perspective was found to be the most underexplored, which is likely due to its generally limited use both in everyday contexts as well as in traditional (textual) narratives. However, it has been suggested that the use of second-person voice in virtual reality can enhance self-identification with virtual characters or environments (Barbara & Haahr, 2024; Vosmeer, Roth & Koenitz, 2017), which also makes it potentially valuable to examine in prosocial storytelling.

Future research in prosocial storytelling should examine how the individual and combined effects of different media and narrative characteristics, such as perspective, influence prosocial outcomes.

Prosocial Storytelling Research Needs to Pay Closer Attention to How the Story Ends

The results of the analysis showed that over half of the narratives concluded with a distinctly positive or negative ending, while only two studies explicitly addressed this by manipulating the story ending as part of their study design (Fitzgerald et al., 2020; Paravati et al., 2022). However, there are many ways in which a story's ending may affect its persuasive impact.

First, narratives providing a clearly valenced ending (positive or negative) can offer audiences a resolution and thus enhance their feeling of closure, which has been linked to persuasive outcomes (Orazi et al., 2016). Second, a narrative ending may signal either a "just" or an "unjust" outcome, which can evoke distinct emotional responses (Hoeken & Sinkeldam, 2014) and, in turn, influence audiences' motivation to act (e.g., unjust endings emphasizing that there are still things to be done about the given issue). Third, when a narrative demonstrates a prosocial act resulting in a meaningful and positive outcome, (i.e. employing vicarious reinforcement), it may encourage audiences to engage in a similar manner (Bandura, 1986). This is also supported by research that suggests that donors who are made aware of the (positive) impact of their contribution are more likely to engage in donation behavior (Saeri et al., 2023). Alternatively, in certain contexts, negative endings may similarly hold significance for prosocial storytelling. For example, some negative emotions such as guilt have been linked to increased prosocial intentions and behavior (Xu, Bègue, & Bushman, 2012; Van Venrooij, Sachs, & Kleemans), whereas others, such as sadness, have been suggested to potentially have adverse effects (Ye, et al., 2020).

Prosocial storytelling research could benefit from a more thorough examination of narrative resolution, closure, and story ending. Although the relationships among these constructs may pose methodological challenges, (particularly given the subjective nature of narrative closure; Klauk, Köppe, & Onea, 2016), exploring their influence on various prosocial outcomes would represent a valuable direction for future research.

CONCLUSION

Prosocial storytelling is becoming more prominent in scholarly work and real-world practice, but the systematic methods and its conceptual foundations for assessing its persuasive impact are still in early stages. This review synthesized existing work and aimed to clarify the conceptual foundations of prosocial storytelling, thus taking an important step toward advancing the field. The review was guided by two main aims: to describe

the methodological and design choices in existing studies, and to provide guidance for future research. To address the first aim, we examined how prosocial storytelling studies can be characterized, and how narratives in empirical studies have been designed.

The findings showed that prosocial storytelling studies have largely relied on traditional text-based stimuli. Additionally, most studies focused on internal psychological responses such as attitudes and intentions, with only a few measuring actual prosocial behavior. Furthermore, an analysis of experimental approaches in the literature revealed four categories: investigations of specific narrative features, comparisons between narratives and non-narratives (e.g. statistical accounts), comparisons between distinct narratives and variations in narrative delivery medium or format.

Emphasizing the central role of narrative content in prosocial storytelling, a unique contribution of this review was the analysis of narratives used in empirical studies, with an emphasis on characteristics that may hold particular relevance for guiding future design and considerations. The content analysis revealed interrelated yet distinct prosocial themes. Additionally, we noted that further research was needed to better understand the role of narrative perspective, as well as how characteristics such as story endings and closure may contribute to prosocial outcomes.

Lastly, we addressed a key issue in prosocial storytelling, namely, the ethical implications and the importance of transparency regarding its persuasive intent. By proposing working definitions, we argue that developing effective narrative persuasion strategies in prosocial contexts requires ethical clarity and communicative integrity about its underlying aims.

The study findings offer important theoretical and practical insights, providing directions for future research and specific recommendations for scholars and practitioners seeking to develop more effective prosocial storytelling strategies across traditional and emerging media.

Limitations

Several limitations of this review should be acknowledged. First, the study was limited to peer-reviewed empirical articles available in the selected databases (with Web of Science as the primary source), which may have excluded other relevant studies published elsewhere. A further limitation is that the review was restricted to English-language publications and studies using English stimuli (or translations), which may have limited its scope to English-speaking contexts and excluded research from other fields and cultural contexts. Additionally, we acknowledge the potential for bias stemming from both the search strategy and inclusion-exclusion criteria, particularly given the dual focus of the review: synthesizing existing studies and analyzing the narrative stimuli used within them.

Furthermore, an inherent limitation of the current study is its reliance on selected keywords for database searches. Although these were carefully selected and iteratively refined throughout the initial stages of the review process, some studies may have been inadvertently excluded if they did not include the terms reflected in the search query (e.g. omitting "prosocial, " "narrative, " or "story"). This limitation also highlights a central issue addressed throughout the current work, namely, that the field of prosocial storytelling is still in early stages and has yet to be clearly established as a cohesive area of research. Therefore, given that definitions of core constructs can vary (e.g. what constitutes as "prosocial" or what qualifies as a "narrative"), relevant work at this stage remains scattered across various disciplines and domains. Thus, even when applying a systematic search strategy, articles engaging with specific topics (e.g., in climate or health communication contexts) may have been missed, despite engaging with similar aims.

Another important limitation is that several potentially relevant studies were excluded due to inaccessible stimulus materials (e.g., use of copyrighted materials, expired stimuli links). While efforts were made to contact authors who did not include their stimuli in the article itself (e.g., in appendices or public repositories), a number of studies were nevertheless excluded for this reason. This highlights an important challenge in narrative-based research. It has previously been noted that narratives used in experimental research do not always reflect the types of stories people encounter in everyday contexts (Polletta and Redman, 2019; Dahlstrom et al., 2017), which can potentially limit their external validity. Because development of original (narrative) stimuli can be resource-intensive, researchers may thus want to rely on externally sourced stimuli materials. However, while the use of externally sourced materials may reduce research burden and enhance ecological validity, researchers must also ensure that these materials can be accessed, shared, and preserved to allow for replicability in future research.

Finally, this study did not account for audience characteristics (e.g., demographics, psychological dispositions, media literacy) and other additional narrative features (e.g. narrative length, number and types of characters) that may be relevant for investigating narrative impact on prosocial outcomes. Therefore, we suggest that these should be examined in future studies.

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APPENDIX A

Supplementary Methodological Materials

Table A1. RQ1 Coding Framework for Study Review Variables

Research Questions	Focus	Example Variables	Coding Approach
RQ1a	Experimental Manipulations	Narrative vs. nonnarrative, narrative features, distinct narratives, modality	Interpretive coding
RQ1b	Study Design	Cross-sectional, longitudinal, between/within subjects	Direct extraction
RQ1c	Assessment Methods	Self-report, behavioral, observational	Direct extraction
RQ1d	Measured Prosocial Outcomes	Empathic engagement, attitudes, intentions, behavior, policy support	Interpretive coding
RQ1e	Media and format	Text, video, interactive, immersive formats	Direct extraction

APPENDIX B

Codebook for Analyzing Prosocial Narratives

Version: v3 Date of finalization: 04.12.2024 Author: Nele Kadastik (nele.kadastik@ru.nl)

Study context and instructions:

This codebook was developed as part of the above-mentioned study which examines empirical research on narrative persuasion in prosocial storytelling.

The broader study has two aims: (1) to describe the methodological and design choices made in existing studies, and (2) to provide guidance for future research in the field. The codebook specifically supports Research Question 2 (RQ2): How have prosocial storytelling narratives been designed in such studies?

To address this, the codebook includes variables that capture key elements of narrative design in the selected studies:

Narrative: whether the stimulus qualifies as a narrative, based on the operational definition used in this study (i.e., A causally related sequence of events that involves at least one character (any intelligent human and non-human entities) and some type of transformation, change or development whether in the characters, events, or setting, unfolding over time)

Narrative Perspective: the point of view from which the story is told

Prosocial Themes: the overarching theme in the prosocial narrative

Story Ending Valence: the emotional tone of the outcome of the story

The coding process begins with an initial evaluation for determining whether the content qualifies as a narrative (Criterion A, Narrative Y/N) based on the proposed definition applied in the context of this study. If the content does not meet the criteria, it is excluded from further coding. If the content meets the criteria, coders will proceed with the classification process, applying the relevant coding categories as specified throughout the document. These categories include classifications related to narrative perspective, central themes and the story ending valence.

A. Narrative (Y/N) Variable Name: "Narrative Structure" Value labels: 1 = "No"; 2 = "Yes"; 3 = "Not sure"

Narrative defined as: A causally related sequence of events that involves at least one character (any intelligent human and non-human entities) and some type of transformation, change or development (whether in the characters, events, or setting) unfolding over time.

A1. Does the narrative convey more than one event? (i.e., a sequence of events)

Is it possible to identify multiple events that happen in the narrative?

Are the events connected, for example, does one event trigger the next?

Do the events move the narrative forward, forming a chain or progression? EXAMPLE: Tom finds an old letter in his grandmother's attic [Event 1]. The letter reveals a family secret that shocks him [Event 2]. He decides to confront her parents about the secret [Event 3].

IF YES, continue to A.2

A2. Is it possible to identify a character in the narrative (e.g. A protagonist, or another type of character)? IF YES, continue to A.3

A3. Is there a change or transformation that takes place, be it in the events, characters, or setting? Can involve change(s) in a character's behavior or outlook that drive the narrative forward.

Can involve significant event(s) that alter the course of the story (e.g., a crisis, discovery, or turning point).

Can involve shift(s) in setting that changes the narrative's tone or the characters' challenges.

EXAMPLE: Tom was going through his grandmother’ s attic when he found an old letter tucked away in a dusty box. As he read it, it revealed a family secret he did not expect. He couldn’ t keep it to himself and decided to confront his parents about it. When he finally spoke to them, they shared their side of the story, and to his surprise, it brought the family closer than ever before. [Tom's character undergoes a transformation (from shock and skepticism to understanding and reconciliation), and the family relationships change as a result of the confrontation.] IF YES for all above, the narrative should be marked with "1" (YES)

B. Perspective (1st, 2nd, 3rd, Mixed, N/A)

Identify the perspective through which the story is being told.

Value labels: 1 = "1st"; 2 = "2nd"; 3 = "3rd"; 4 = "Mixed"; 5 = "N/A"

B1. When a first-person perspective is used, the storyteller recounts events from their own point of view, using "I" or "we," providing direct access to their thoughts, feelings, and experiences.

EXAMPLE: "I was going through my grandmother’ s attic when I found an old letter tucked away in a dusty box."

B2. When a second-person perspective is used, the storyteller directly addresses the reader/viewer as "you," thus engaging them in the events as if they are experiencing them firsthand.

EXAMPLE: "You were going through your grandmother’ s attic when you found an old letter tucked away in a dusty box."

B3. When a third-person perspective is used, the storyteller describes events from an external viewpoint, referring to characters by their names or pronouns like "he," "she," or "they," presenting a broader perspective on the story.

EXAMPLE: "Tom was going through his grandmother’ s attic when he found an old letter tucked away in a dusty box."

Third-person narratives, characters’ thoughts or dialogue may appear in the first person within quotes, however, this does not alter the overall narrative perspective. For instance: "Tom found an old letter in a box in the attic. 'I have never seen this box before. I wonder who wrote the letter,' he thought.". In this

example, the narrative is written in the third person ("Tom found an old letter"), but the character's thoughts are presented in the first person within quotes ("I have never seen this box before"). Despite the use of first-person quotes, the perspective should be coded as third person.

B4. The perspective can be considered mixed if the story consistently swaps between different narrative perspectives (e.g., first person, second person, and third person), making it not possible to establish a predominant perspective.

EXAMPLE: "Tom was going through his grandmother's attic when he found an old letter tucked away in a dusty box. As he read it, it revealed a family secret he did not expect, shocking him. You wouldn't have been able to ignore it either if you had been in his shoes. I know I couldn't, I remember the day I confronted my parents about a similar secret, and it changed everything for me."

B5. N/A - This might occur when the narrative lacks clear indicators of who is narrating or the pronouns and narrative voice used do not align consistently with any recognizable perspective. For instance, the narration might focus solely on describing events or actions without attributing them to specific characters or viewpoints.

C. Prosocial Theme

The Themes code is used to categorize narrative stimuli into five pre-established themes (identified through preliminary analysis). Coders should identify the most prominent theme. Value labels: 1 = "Health and Personal Medical Narratives"; 2 = "Ethics, Social Responsibility, and Empathy in Action "; 3 = ' Social Justice, Marginalization, and Identity "; 4 = ' Displacement, Refugee, and Humanitarian Experiences "; 5 = " Environmental Responsibility and Climate Empathy"; 6 = "Overlapping/Multiple"; 7="N/A"

When coding for the most prominent theme in a narrative, begin by identifying which theme is central to the narrative's progression and meaning. If multiple themes are present and it is difficult to determine which is more significant, coders should prioritize the theme that appears most frequently or has the greatest influence on the narrative's progression. If no single theme clearly stands out due to their equal relevance or overlap, select the option "Multiple/Overlapping." When using this option, provide an explanation in the comments section, specifying why a single theme could not be chosen and, if possible, list the overlapping themes. If a narrative does not clearly align with any of the predefined themes, N/A should be used, and if possible, a comment should be added to suggest an alternative category.

C1. Health Narratives centered on various health-related issues/challenges and medical experiences, and/or broader impact on family, communities, and healthcare systems (can include themes of prevention, access to care, and emotional and psychological effects).

C2. Moral action Narratives where moral dilemmas and personal responsibility are central to the storyline; stories feature characters making difficult decisions to act (sometimes at personal cost). Characters may face situations where they must determine the right course of action in a challenging or morally complex context.

C3. Social Justice Narratives that explore experiences of individuals and/or communities facing systemic inequities, fighting for equal rights, recognition, and opportunities (e.g., marginalization, and identity). For example, oppression faced by specific groups, challenges they encounter in their fight for justice.

C4. Stories of displacement Narratives that deal with displacement, refugee experiences, and humanitarian issues. These explore the emotional, physical, and psychological toll of leaving one's homeland due to conflict, persecution, or disaster. Themes often include resilience, challenges of integration, and the human cost of such crises.

C5. Environmental Narratives Focus on environmental issues such as climate change, resource depletion, and environmental justice. Stories focusing on ethical responsibility to protect the planet and vulnerable populations most impacted by environmental harm.

D. Story Ending Valence D. How is the Conflict Resolved in the Narrative?

Value labels: 1 = "Positive Ending" ; 2 = "Tragic Ending"; 3 = "Neutral"; 4="Openended"; 5="N/A" - 5 -

D1. Positive Ending: Central conflict is successfully resolved, with a positive or successful outcome The resolution is satisfying or fair leading to success, growth, or fulfillment for the central characters.

D2. Tragic or Negative Ending: Central conflict resolved but results in a negative outcome. The story ending is unfair, or ends with failure, loss, harm or disappointment

D3. Neutral: Central conflict resolved but not in a way that can be described as positive or negative. The resolution is neither satisfying nor disappointing.

D4. Open-ended: Conflict unresolved but left unclear, unresolved or ambiguous.

D5. N/A: Not applicable or cannot be determined.

APPENDIX C

Supplementary Results

Table C1. Experimental Manipulations of Narrative Features (RQ1)

Narrative Features Manipulations	No. of Articles	Examples
Narrative Frames	3	Hopeful vs. negative cancer journey (Fitzgerald et al., 2020) Environmental harm versus economic benefits (Shen et al., 2014)
Character Similarity	3	Manipulating matching vs. opposing political orientation (Niederdeppet et al.,2015)
Character Traits	3	Low vs. high character responsibility (Niederdeppe et al., 2015) Variations in character appearance (Petterson et al., 2022)
Vicarious Reinforcement	3	A character helping vs. not helping (Smith et a;., 2023) Inclusive behavior being rewarded vs. punished (Tao et al.,2023).
Pre-narrative Exposure	6	Imagining a positive interaction with an outgroup member (Igartua et al., 2019) Participants primed to feel social inclusion or exclusion before viewing the message (Kandaurova et al.,2019) Story presented as imagined (fiction) or based on real events (non-fiction) (Fitzgerald et al., 2020; Petterson et al., 2022)
Story Ending	2	Story concluding with a positive or negative ending (Paravati et al., 2022; Fitzgerald)
Narrative Structure	1	Presenting the same story with paragraphs in logical vs. random order (Tamul et al., 2019).
Focalization	1	Amount of insight into the character's inner world (Tukachinsky et al., 2019).
Perspective	1	Manipulating narrator's viewpoint (Tukachinsky et al., 2019)
Agency	3	Manipulating the degree to which participants are depicted as having control over decisions and outcomes within the narrative (Walter et al., 2018;Steinemann et al., 2017 ; Oh et al., 2018)