



A Spectrum of Audience Interactivity for Entertainment Domains

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Abstract. The concept of audience interactivity has been rediscovered across many domains of storytelling and entertainment—e.g. digital games, in-person role-playing, film, theater performance, music, and theme parks—that enrich the form with new idioms, language, and practices. In this paper, we introduce a *Spectrum of Audience Interactivity* that establishes a common vocabulary for the design space across entertainment domains. Our spectrum expands on an early vocabulary conceptualized through co-design sessions for interactive musical performances. We conduct a cross-disciplinary literature review to evaluate and iterate upon this vocabulary, using our findings to develop our validated spectrum.

Keywords: Audience interaction · Audience participation · Entertainment · Agency · Performance interaction · Immersion

1 Introduction

Interactivity has the power to immerse and empower audiences across divergent domains. Although these mediums use different terminology, sometimes describing interactive approaches as *participatory* or *immersive*, their desired outcome is to design fulfilling storytelling experiences. In *Hamlet on the Holodeck*, for instance, Murray argues that future science fiction authors will be challenged to define rules for narrative interaction that transform passive readers into audiences engaged in immersive and reactive narrative experiences [81].

In pursuit of this dream of the Holodeck, HCI research often designs novel technology to support immersive experiences [65, 105]. However, generalizing and characterizing *rules for interaction* is as tricky for writers and designers as it is for practitioners [20]. Designing interactive experiences often means learning from previous work and building experiences using available tools. Since interactive audience experiences exist in a range of contexts, designers are often limited to learning from their area of expertise. We posit that in addition to new technology, the HCI community needs *conceptual* tools that help designers across performance mediums consider and compare how audiences can interact.

To develop new forms of artistic expression, HCI practitioners require a common language to compare and learn from diverse experiences. Prior work defined models that broadly measure [119], and describe audience agency and participation [9, 33, 90, 107, 126], but literature suggests that more complicated relationships must be defined to address Murray’s fully interactive world [81].

This paper expands on an early spectrum conceptualized through co-design sessions for interactive musical performances [108], using it to develop our *Common Spectrum of Audience Interactivity for Entertainment Domains*. Our approach explicitly allows designers across domains to discuss interactive experiences using a common taxonomy. First, we define audience interactivity, describe its benefits, and overview previous efforts to characterize interactivity. Then, we conduct an extensive review of interactive experiences across theater, theme parks, and games, three domains that represent diverse audiences, modes of interaction, and performance spaces. Our findings validate and expand on the early spectrum, refining it with additional levels, labels, and definitions. For clarity, the paper presents the literature review after introducing the new spectrum.

In summary, our work (1) overviews previous work on audience interactivity, (2) reviews literature across three entertainment domains, and (3) presents a new Spectrum of Audience Interactivity.

2 Related Work

In this section, we first describe how storytelling has evolved to include audiences, resulting in more immersive and engaging experiences. Then, we define interactivity as audience agency and participation in performance, and describe how it contributes to immersion and engagement. Finally, we overview previous efforts to characterize audience interactivity.

2.1 Storytelling

Throughout history, narratives have defined human culture and entertainment, *transporting* audiences [48] by creating “an experience of cognitive, emotional, and imagery involvement.” In our research, we use Zimmerman’s definition of narrative [126], building on Miller [78], who defines narrative as an initial state, a change in that state, and insight brought about by that change. We also adopt the term *transmedia* [27, 44] to refer to interactive audience experiences.

In transmedia experiences, narratives invite audiences to interact with experiences. Theme parks fulfill audience needs to interact by creating a fantasy of another place and time [24, 79]. Purposely designed to be isolated, theme parks invite guests to travel [29], to transport themselves to a new location. Leaving the real world at the parking lot, guests gain temporary “citizenship” to a fantasy world [17], escaping the rules and conventions of the outside world [118] for one with no clocks [24] or defined social barriers [12].

We see this model replicated in live theater. In audience-driven experiences like *Coffee! A Misunderstanding* [105], authors invite audiences to change the

direction of an improvised narrative. Other examples include *The Night of January 16th* [91], in which audience members play the role of a courtroom jury, and *Drood* [89], a musical adaptation of a murder mystery. Games likewise offer players roles in predefined narratives, or allow narratives to naturally emerge from play [70,94], such as in the interactive drama *Façade* [69], where virtual characters respond to a player-performer narrative.

2.2 Defining Audience Interactivity

The role of the audience has changed. The capacity to alter and transform experiences has empowered audiences [75], leading to a dissolution of traditional audiencehood [16]. Previous work has described degrees of audience immersion in a narrative, however, the relationship between immersion, audience, and performers have not yet been explored. This paper extends current definitions to concretely classify the full breadth of audience experiences in entertainment.

For this reason, we define an audience member broadly; as a *bystander*, *spectator*, *customer*, *participant*, or *player*. Likewise, we define audience interactivity as a range of experiences that may allow audiences to participate or interact. These experiences may vary in:

- **Physical and Virtual Mediums.** Experiences can be *physical*, such as live theater, or *virtual*, such as VR or Twitch streams.
- **Location.** Experiences settings may vary in size and scale, from a single room (or virtual dungeon), to a university campus (or virtual world).
- **Formality and Setting.** Experiences can be private or public. For instance, an arcade simulator may be a individual experience, a murder mystery might include a group of friends, and a street performance may be public-facing.
- **Ratio of Participants to Performers.** Experiences may have varied ratios of audiences to performers. For instance, a massively-multiplayer role-playing game (MMORPG) may have thousands of players, while an interactive art installation may have no designated performers.
- **Audience Influence and Agency.** Experiences may afford audiences a range of influence or agency. For instance, a formal theater might designate when audiences should interact in performance, whereas a street performance might give them the freedom to join in when they feel comfortable.
- **Tools & Technology.** Interactive experiences use a range of tools to create interaction. Tools can range from physical props and costumes to smart-phones, tablets, or wearables.

2.3 Supporting Engagement and Immersion

Entertainment literature supports the value of audience interaction to create engagement and immersion [111]. For instance, Green et al. found that narrative transportation can affect persuasion and belief change, as well as enjoyment [48].

Engagement refers to the intensity and emotional quality of user involvement [43]; engaged users exhibit positive emotion, and show sustained cognitive

task involvement [41]. Engagement is often created through immersion [15], a feeling of “deep play” [26,32] that furthers emotional investment [111]. Several constructs [47] have been proposed to describe immersion. Ermi and Mayra [32] divide immersion into *sensory* immersion, *challenge-based* immersion, and *imaginative* immersion. Brockmyer [15] suggests that sensory immersion often creates a sense of presence or “being there,” surrounded by another reality that takes over attention and perception [26,32,74]. Likewise, Csikszentmihalyi describes the pinnacle of challenge-based immersion as *flow* [25,31,58,99], a state of total task absorption and optimal performance [32].

2.4 Previous Efforts to Describe Interactivity

Previous research endeavored to characterize interactivity in media experiences. Relatively simple models include Everett’s single-dimensional scale that rated the interactivity of communication technologies [33], and Rafaeli [90], who classified media based on audience responsiveness. Based on empirical data from questionnaires answered by 6700 players, Yee [124] added an “immersionist” factor to Bartle’s classification of players into achievers, explorers, socializers and killers [7]. Zimmerman [126] identified four modes of audience interactivity that complement our goal of broadly defining a taxonomy; *Cognitive Interactivity*, a response to an internalization of a narrative, *Functional Interactivity*, interaction with physical text such as turning pages, *Explicit Interactivity*, participation in narrative flow by making choices and participating in narrative events, and *Meta-interactivity*, interaction that allows for narrative construction, deconstruction, and reconstruction.

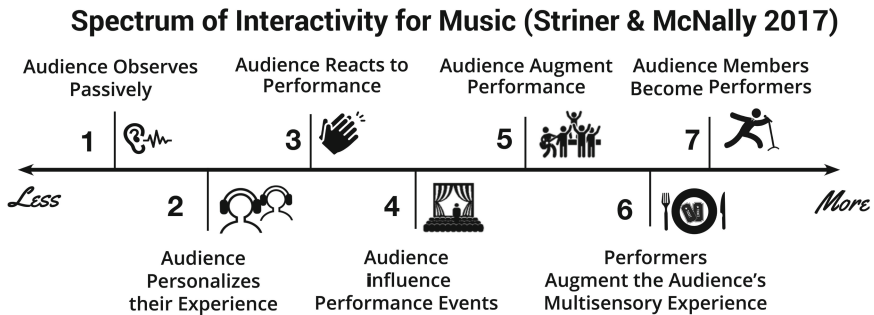


Fig. 1. Early spectrum of interactivity for musical performances [108]

Multiple models characterize interactivity by the choices and actions of audiences [45, 61–63, 103]. Lindley compared audience types, motivations, and play styles across current literature [88, 121], and defined his own taxonomy [64] to describe three attitudes in narrative; the *audience*, the *performer*, and the *immersionist*. Steuer [107] expanded on Everett’s characterization of interactivity with a two-dimensional model based on vividness, the richness of a mediated

environment, and interactivity, a user’s ability to modify the vividness of their experience. While Steuer’s method is highly cited as a measure of immersion and engagement, it notably fails to provide explicit criteria to map new experiences onto his scale [55]. Laurel’s three-dimensional model further characterizes interactivity by frequency, the range of choices available, and the extent to which choices affect experience [62]. Likewise, Goertz introduced a four dimension scale of interactivity using degrees, numbers, and flexibility of choice [45, 55]. We extend these models, accounting for both audience engagement and agency.

Interactivity has also been discussed in great detail by researchers in HCI [61, 101]. Zeltzer describes autonomy and interaction as a single dimension that encompasses all aspects of an audience’s relationship to their environment [125]. Laurel further emphasizes the experiential nature of interaction with media technologies [61]. Both [61] and [107] describe media use in terms of *mimesis*, likening the relationship between users and technology to actions in a play, encouraging users to develop a first-person, not third-person, relationship with their environment. Engagement, which Laurel (1991) describes as a primarily emotional state with cognitive components [63], serves as a critical factor in arousing a feeling of “first-personness” [107].

Previous work by Striner and McNally [108] stewarded a first step toward understanding the many ways in which technology can allow audiences to interact with musical performances. Their work developed a spectrum of interactivity (Fig. 1) for musical performances from children’s codesign sessions using Cooperative Inquiry (CI) derived from *Participatory Design* [28, 50]. Using their spectrum as a starting point, we conducted an extensive, cross-disciplinary literature review to evaluate and iterate upon this vocabulary. This paper presents findings from the literature survey and a revised spectrum of interactivity.

3 Method

The goal of this work is to develop a taxonomy of audience interactivity to facilitate communication and collaboration among experts and designers in a wide variety of entertainment domains. This spectrum enables designers and practitioners across domains to discuss and learn from a broad range of experiences, and to consider challenges inherent to diverse audience interactivity designs. Building on prior work [108], this research evaluates and generalizes findings from music across various entertainment domains through a comprehensive review of audience interactivity literature in theater, theme parks, and games and introduces a common *Spectrum of Audience Interactivity* for entertainment. In this section, we first overview the underlying factors for our choice of theater, theme parks, and games as our three representative entertainment domains. Then, we describe our literature review process.

3.1 Choice of Entertainment Domains

Audience interactivity exists across a broad range of entertainment domains [40, 42, 86, 100]. To validate Striner’s spectrum [108], we considered how well it

Table 1. Index of literature review organized by theory, storytelling, theater and music, theme parks, games, and transmedia topics.

Topic	Citation index
Theory	8, 9, 12, 13, 14, 15, 18, 21, 22, 25, 28, 31, 32, 33, 37, 41, 42, 45, 46, 49, 50, 52, 55, 60, 61, 64, 68, 74, 75, 78, 81, 90, 99, 101, 108, 109, 126
Storytelling	5, 9, 19, 20, 22, 43, 44, 48, 49, 54, 63, 67, 70, 76, 81, 84, 86, 91, 93, 114, 116, 120, 127
Theater, music	1, 8, 10, 11, 12, 16, 23, 30, 34, 38, 40, 54, 56, 57, 60, 62, 69, 71, 76, 80, 82, 83, 84, 88, 89, 92, 96, 105, 107, 109, 110, 117, 121, 123
Theme parks	2, 17, 24, 29, 35, 51, 59, 65, 72, 79, 85, 95, 98, 103, 119
Games	3, 4, 5, 7, 8, 10, 15, 18, 32, 36, 39, 41, 47, 53, 58, 66, 70, 74, 94, 97, 100, 104, 111, 112, 113, 114, 115, 118, 125, 127
Transmedia	9, 18, 20, 27, 30, 39, 44, 73, 77, 87, 92, 102, 105, 107, 117, 122

reflected interactivity across three domains—theater, games, and theme parks—that embodied the range of audience interaction described above. Together, our review uncovers insights that inform our iteration on the spectrum.

The three domains vary greatly in form. Theater and music performances are primarily physical experiences that occur in dedicated venues. Conventional theatrical segregates audiences from performers, curbing feedback to pre-and-post show clapping and cheering [60], while contemporary theater allows audiences to contribute to performance, encouraging spontaneous [68] and structured participation [96,105]. In contrast, games exist in a range of physical and virtual forms, from tabletop games that build narrative through a shared imaginative fantasy [36], to video games that immerse audiences through integrated graphics, animation, and reward structures [104,111]. In juxtaposition to theater and games, theme parks created shared experiences for divergent audiences. Based on ancient and medieval religious festivals, trade fairs, and traditional amusement parks [79], themes parks assimilate storytelling [17,95], simulation, and interactivity [79,98] through blended physical and virtual experiences.

3.2 Literature Review Process

The primary goal of this work was to understand how the three representative domains describe audience interactivity. Our goal was to understand what interactions existed in those domains.

We extensively reviewed literature on interactive audience experiences across academic publications and in practitioner mediums. We systematically reviewed multiple databases (e.g. AAI, ACM, PsycINFO, CiteSeerX, CogPrints Electronic Archive, ResearchGate, TRLN) for a range of topics (previous definitions and models of audience interactivity, engagement, immersion, agency, mediums of interaction, and roles), performing “related article” searches to identify model applications and limitations. Next, we shortlisted articles that defined interactivity or described interactive experiences in the three domains. In parallel, we came

up with a list of synonymous phrases and keywords across the three domains, and searched websites and blog posts for descriptions of practitioner experiences. We analyzed domain publications to understand how the original spectrum levels were reflected in academic literature, and to identify gaps where literature did not fit the original spectrum. When domains were not evenly represented at a level, we performed a secondary Google Scholar search to identify any literature we may have missed. The literature we reviewed is indexed by topic in Table 1.

4 Summary of Results

This section summarizes our literature findings and introduces our *Spectrum of Audience Interactivity for Entertainment Domains*. First, we affirm the presence of a spectrum, describe modified levels, and present our validated spectrum.

4.1 Confirming the Existence of a Spectrum

The literature review affirmed the presence of the interactivity continuum, finding that interactivity ranged from passive to active experiences delineated by the agency of individual audience members. “Passive” and “personalized experiences” gave audiences agency over themselves, and “influencing,” “augmenting,” and “becoming a performer” levels gave audiences agency over other audience members, performers, and over the larger experience. Cross-domain literature supported the presence of these different levels, however we found that interactivity was more prominent in some domains; for instance, theater and music predominantly use interactivity to influence and augment performances [105, 116, 123], games employ audiences as performers [70, 97], and theme parks create personalized and bidirectional experiences [95, 118].

4.2 Modified Levels

Our review found that the spectrum required some modification. Shown in Fig. 2, the new spectrum introduces a new level of audience interactivity and modifies the name of an existing level.

Bidirectional Influence. The early spectrum included the level “Performers Augmenting the Audience’s Multisensory Experience.” This level was difficult to describe, however, we found that “Bidirectional Influence” clearly characterized the back-and-forth dynamic of interactive performance.

Take over Performance. The early spectrum described “Become Performers” as the highest level of interactivity. However, we found that interactivity extended beyond this; audience members could not only become performers, but fully control an experience. For instance, audience members invited into a drum circle could lead the music. Thus, we added a new level, “Take over the Performance,” that describes this experience.

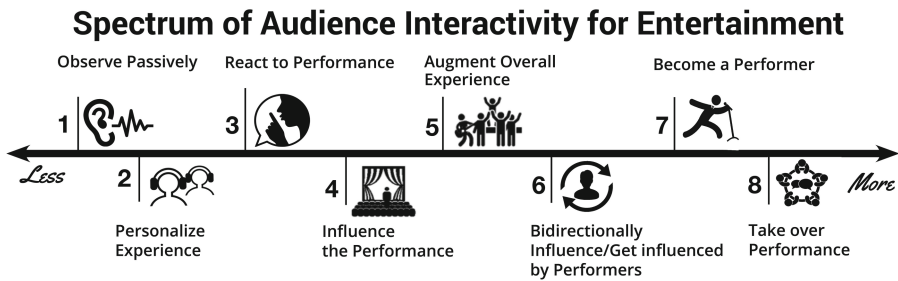


Fig. 2. The new Spectrum of Audience Interactivity for Entertainment Domains. We map audience interactivity from left to right; from least to most active.

4.3 Proposed Spectrum of Audience Interactivity

Presented in Fig. 2, the *Spectrum of Interactivity for Entertainment Domains* expands on Striner’s *Spectrum of Interactivity* [108] using findings from the literature. Least interactive on the spectrum are (1) *observing passively*, referring to an audience member cognitively shaping their experience, and (2) *personalizing their experience*. More interactive is (3) *reacting to performance*, a level that describes how audience members react to performance and to one another, such as by clapping or responding to a comment on YouTube.

In (4) audience members influence the performance, exerting indirect control over the overall experience. For example, virtual audiences watching a Twitch stream could suggest a way for a streamer to solve a puzzle. Audience members in (5) *augment the overall performance experience* without explicitly becoming performers, for instance, dancing along at a rock concert. In (6) *bidirectional influence* between audience and performers, performers explicitly respond to the audience’s influence or reactions, such as Mickey Mouse waving back at children.

Higher levels give audience members an explicit role in the performance, allowing them to (7) *become performers* and (8) *take over the performance*. In the former, performers are in control, for instance, audiences singing along with a choir, while in the latter, audiences take control. For example, an audience member invited to perform karaoke onstage would take over a performance.

5 Review of Interactivity Levels

The following section presents our review of the interactivity literature, organized from least to most interactive across the levels of our proposed Spectrum.

5.1 Interactivity in Passive Experiences

Traditional performances assume a clear distinction between the role of the audience and performers [16]: audiences do not interact with performers or have a role in the direction of performance or narrative. Forlizzi and others [37, 57, 126]

contradict this assumption, suggesting that audiences can interact with experiences cognitively, through a psychological reader-response that imbues seemingly passive experiences with an abundance of emotional interaction.

The literature suggests that audiences participate in collective emotional experiences such as laughing or holding their breath that validate their personal experiences; this helps explain why the presence of an audience is essential to the sense of “liveness” [92]. HCI research has studied passive engagement by watching audience expressions and analyzing gestures using computer vision [14, 73].

Research also argues that audience interaction is not always necessary or appropriate [108]. Green et al. [49] discuss how participants may simply wish to be distracted or passively entertained [14] by fiction. This outcome is further supported by literature on interactive film suggesting that passive experiences allow audiences to absorb, appreciate, and reflect on performance [14, 48, 120].

5.2 Interactivity Through Personalization

Personalization in interactivity describes the task of tailoring experiences to audience preferences, tastes, or capabilities. Theme parks fully embrace personalization in order to fully immerse audiences in fantastical worlds [72]; guests can meet characters [53], and personal experience narratives [24, 95]. Paralleling these physical experiences, recent advances in narrative intelligence and augmented and mixed reality have likewise allowed for games to be personalized to player locations [4, 66], abilities [97, 113], and preferences [110].

Stapleton [106] describes how audiences personalize performances, discussing how a story originating in print (e.g. Harry Potter) can ignite a surge in new markets in games, theme parks, and costumes. Using dress to personalize experiences [108] is heavily paralleled in literature; Eicher’s theory describes dressing up in fantasy costumes as a communication of the *secret self*, where the bulk of fantasy interactions takes place [30, 39]. Similarly, Miller proposes a construct of fantastic socialization, where individuals play unrealized roles “constructed only with the cooperative help. . . and the contrasting foil provided by others” [46, 78]. Fron et al. define such personalization as a co-performative act with other spectators, gaining pleasure from the ingenuity and artistry that go into creating one’s persona and costume [8, 39, 53]. This style of personalization can be seen at American cultural festivals such as *DragonCon* [39], and also reflects Zimmerman’s “meta-interactivity” mode [126].

5.3 Reacting to the Performance

Reacting to performance is a staple of traditional audience experience [60]. Literature suggests that audience members enhance the collective audience experience by influencing others’ reactions [87]; Brignull and Rogers [13] explain that such interactions begin with peripheral awareness, transition to focal awareness, and culminate in direct interaction with the display. Their research observes the “honey pot” effect, in which bystanders are more likely to cross interaction

thresholds when others do. For instance, audiences are likely to give a standing ovation (or throw rotten fruit) when others do the same [56]. An immersive interactive play, *Sleep No More* [116], extended this concept, allowing live and remote audiences to communicate through Internet-of-things (IoT) props.

Theme park literature characterizes this phenomenon as a learning tool. For instance, guests at the Wizarding World of Harry Potter watch others learn the mechanics of “casting a spell” [18, 59]. Reeves describes this experience as an entertainment and teaching experience [92] that allows audiences to study interaction while waiting their turn. Magic Kingdom line experiences actively design for this affordance; guests in line for a Peter Pan ride view members ahead of them play with interactive shadow puppet displays, ringing bells, or even releasing Tinker Bell from inside a lantern [3, 35]. This, in turn, prompts them to interact, mimicking scenes they have seen before, playing on each other’s interactions and inventing new ones. Michelis [77] describes this phenomenon of the phases of interactions with gesture-based displays as an “audience funnel.”

5.4 Influencing Performers

Interaction often allows audience members to indirectly influence the performance experience. Influencing performance includes visual voting systems [117], and audience input in improve [76]. While these types of interactions are popular, theater literature suggests that they are often asynchronous or inequitable [60], prioritizing audience members closer to the stage [23] or in positions of power [80].

Technical advancements have helped support democratic influence over voting. In an early example, audiences at the 1967 World’s Fair in Montreal voted on alternative endings to a film [2]. Likewise, technology has allowed audiences to influence narratives [19], dialogues [105], or musical compositions [38]. Literature also found that designers wanted audiences to influence different sensory modalities, such as controlling gusts of wind onstage [108].

5.5 Augmenting the Experience

The literature suggests that audiences also want to augment experiences [108]. One way to do this is through multisensory design. For instance, child co-designers augmented music experiences with tangible “sound chips” [108]. Relatedly, Stapleton and Hughes [106] found that immersing movie-goers in multisensory mixed reality trailers created fond memories and positive associations.

Literature suggests that audiences can likewise augment experiences by adopting a composition role. Winkler notes that interactive computer music can “create new musical relationships” between audience and performers [123]; for instance, McAllister [71] allowed audience members to add to a digital score synced to a real-time display for musicians to read. Likewise, audiences can “compose” by dancing to music during performances [83, 109].

This compositional relationship between audience and performers can also be asynchronous; for instance, van Troyer [115] introduced an interface for audiences to co-create asynchronously with composers by drawing “constellation” maps that synthesized new music from previous pieces. Similar examples exist in interactive fiction design. For instance, Machado [67] recounts a storytelling environment, *Once Upon A Time*, that developed characters, story themes, and narratives out of interactions with children.

5.6 Bidirectional Influence

Both physical and digital interactive performances lean heavily on the affordances of bidirectional interaction. For instance, gospel music uses call-and-response to nudge democratic audience participation [82], and computational narratives personalize player experiences by iteratively tracking and adapting narrative scheduling to player pacing [6]. Similar research has produced a virtual dance partner that improvises dance moves based on audience actions [54], and a narrative agent that responds to audience gestures with dialogue [84].

As well as responding to each other, some literature characterizes bidirectional interactions as “pushing and pulling” between audiences and performers. For instance, Rickman [93] described a text narrative mechanic that drives the narrative forward by using word selection to reveal additional information about an object or action [22]. Curiously, the research suggests that bidirectionality many not always be intentional. For instance, Van Maanen [118] describes how at Walt Disney World, guests and cast members cyclically affect each other; cast members are required to smile, but guests not smiling can ruin an operator’s day.

5.7 Becoming Performers

All three domains allow audience members to take on performative roles, but differ in their approach. Games create immersion by giving players a sense of control [21], allowing users to select strategies, and affect outcomes [97]. Video games have an inherent performative experience, allowing audiences to dually function as players and audiences members [104], imbuing players with spectatorship in-between moments of play [112]. For instance, LARPS (Live-action-role-playing games) are considered performance-play experiences [102]. LARPS have no separate audience members, allowing audiences to extemporaneously create engaging narratives from limited preparatory materials [102].

Fantasy sports games further blend the roles of audiences and performers [100] by integrating the “activity of a virtual game and spectatorship of a real sport” [100]; Developments in large-scale streaming, tangible interfaces, and virtual and augmented reality have further changed the game viewer landscape. Twitch allows audiences to watch, and interact with streamers during games [114]. Similarly, augmented reality has given players and viewers a way to experience narratives in physical space [5, 51, 106].

Although less accessible than games [24], theme parks fully embrace audiences in performative roles, integrating storytelling [17, 95], simulation, and interactivity [79, 98], and emphasizing physical experiences. Theme park experiences often give audiences a chance to re-experience character roles and narratives. These firsthand narratives lean heavily on multisensory, spatial, and temporal experiences [79] to create a sense of presence [17, 85].

5.8 Taking over Performance

Performance experiences also allow audiences to “take over” performances, building self-esteem [83] by allowing audiences to reshape existing experiences or co-create new ones. For instance, Boal [11] developed the *Theater of the Oppressed* to promote social and political change; audience members became “spect-actors,” who used the medium to explore, and analyze their personal experiences. Likewise, home experiences like Guitar Hero [10] and Hyperscore [34] have contributed to music appreciation by bridging skill gaps.

Relatedly, music experiences help audiences make sense of and appreciate complex arts [82] by allowing them to co-create new experiences. For instance, Whitacre [122] developed a virtual choir that allowed singers all over the world to contribute to a performance, and Machover’s *City Symphonies* [52] allowed audiences to contribute ambient sounds that made up their city.

Notably, in theater, the role of audiences as a performative agent is contested. In *Hamlet on the Holodeck*, Murray [81] suggests that audience participation may be “awkward” and potentially “destructive;” she describes a Woody Allen story, the *Kugelmass Episode* [1] where a literature professor jumps into the pages of *Madame Bovary*, only to confuse the narrative of the novel; “Who is this character on page 100? A bald Jew is Kissing Mme Bovary?” With this, Murray points out that “when we enter the enchanted world as our actual selves, we risk draining it of its delicious otherness” [81].

6 Conclusion

The goal of this work was to develop a taxonomy to explicitly characterize how audiences can interact and influence experiences across a range of entertainment domains. The spectrum aims to be a useful resource for researchers, designers, and artists to consider opportunities for interactivity. While the spectrum aspires to be comprehensive, new tools and media continually reshape the interactivity landscape, and edge cases undoubtedly exist. We consider such cases to be good fodder for discussion about new forms of interactivity. Further, this research does not endeavor to describe interactivity from the perspective of the performer or to describe audience characteristics (e.g., culture, size, and location). Such perspectives may have unique characteristics that may affect interactivity.

Future work will validate the clarity, precision, and effectiveness of the spectrum by interviewing experts in a range of domains. To help practitioners learn from other domains, we plan to use our taxonomy to survey a range of audiences,

performers, and creators who participate in interactive audience experiences, allowing designers to compare diverse interaction experiences and identify patterns that emerge across domains. This will enable designers to actively consider the novelty and practicality of their interactivity designs, identifying patterns, and anticipate challenges that may arise in experimental designs.

Acknowledgements. Thank you to Jessica Hammer and Theresa Tanenbaum for their generous feedback and support.

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