Volume 4, Number 4, 2015 © Mary Ann Liebert, Inc. DOI: 10.1089/g4h.2014.0143

# Prose Fiction as a Narrative Companion for a Vegetable Parenting Videogame

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#### **Abstract**

*Objective:* The purpose of this research is to explore the capacity of story to connect to a health-related videogame, as well as the qualities that may increase efficacy by making the story compelling. Parents of 3–5-year-old children often report difficulty getting their children to eat vegetables, which are protective against chronic illnesses. Videogames may be vehicles for training parenting practices for successful vegetable consumption outcomes but often rely on stories to provide context and details. Unfortunately, storytelling may interrupt immersion and player agency. Delivering stories outside of gameplay may provide an understanding of game situations while maintaining immersion.

*Materials and Methods:* Two companion storylines (one a romantic adventure and the other a suspenseful fantasy) were generated for a vegetable parenting game, "Mommio," targeting mothers of preschool children. Mothers of 3–5-year-old children (n=18) read both storylines and completed semistructured interviews.

**Results:** Mothers preferred the romantic adventure, which featured strong characters, relatable issues, and an engaging plot. Most mothers were interested in playing the "Mommio" videogame after reading the stories. **Conclusions:** Results suggest that it is possible for prose literature to both motivate gameplay and be an immersive narrative companion to, but separate from, games for health. This literature should include engaging, realistic stories and relatable strong characters.

## Introduction

VEGETABLE CONSUMPTION IS PROTECTIVE against several chronic diseases. <sup>1–3</sup> Because child dietary practices tend to track into adulthood, <sup>4</sup> establishing vegetables as a staple in the pediatric diet is important. Parents influence their child's dietary intake, <sup>5</sup> yet many parents report difficulties getting their child to eat vegetables. <sup>6,7</sup>

Serious videogames, often including a story, <sup>8</sup> have shown promise for promoting health-related behavior change, especially in relation to dietary intake. <sup>9</sup> Thus, games that include stories could be useful tools in equipping mothers with effective strategies for increasing their child's vegetable consumption.

Literature is a popular form of media, with 16 percent of Americans reading between 11 and 20 books per year in 2011 and 32 percent with e-readers reading the same amount.<sup>10</sup> Fiction made up the largest share of book reve-

nue, <sup>10</sup> with romance fiction having the largest market share, <sup>11</sup> followed by suspense and fantasy. <sup>10</sup> Fictional stories may influence behavior <sup>8</sup> and have been shown to be effective in health campaigns. <sup>12</sup>

Narratives originate from ancient oral cultures where people shared stories as life experiences. The Latin root for narrative is *narrare*, or "to recount." In the *Poetics*, Aristotle defined narrative as a story that has a beginning, a middle, and an end. A simpler definition defines narrative as any two events arranged in a chronological or causal sequence. Hinyard and Kreuter offered one of the most comprehensive definitions of narrative: "any cohesive and coherent story with an identifiable beginning, middle, and end that provides information about scene, characters, and conflict, raises unanswered questions or unresolved conflict; and provides resolution."

Narrative has been placed next to language as one of the most distinctive of human characteristics. According to

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Barthes, <sup>18</sup> narrative "is present in every age, in every place, in every society." Lyotard <sup>19</sup> described narrative as "the quintessential form of customary knowledge." Traditionally, narratives have been an important dimension of constructionist inquiry. <sup>20</sup> Increasing empirical evidence suggests that narratives are an important persuasion tool <sup>21</sup> and are processed differently from nonnarratives. <sup>22</sup>

An explanation for how stories may influence behavior is transportation or immersion<sup>23</sup> in which the reader enjoys becoming absorbed into a narrative, allowing the story to influence attitudes, beliefs, or behaviors.<sup>24,25</sup> Immersion or transportation in a story indicates the reader likely finds the characters attractive and may identify with the main characters because of shared life experiences or challenges.<sup>23</sup> If a character finds a game helpful in solving a challenge that the reader shares and if the game is discovered to be available in the real world, the reader may be compelled to try it in hopes of obtaining similar results.

In-game movie clips known as "cut-scenes," which deepen videogame understanding through cinematic exposition, <sup>26</sup> are often used in entertainment videogames. However, this may occur at the expense of a player's sense of agency, creating dissonance between a game designer's intention and the player's personal interpretation of the story. 26,27 The dissonance can cause discomfort and pushback.<sup>27</sup> Replacing ingame cut-scenes with traditional story forms, such as prose fiction, for game-related story exposition may eliminate this dissonance. Prior to gameplay, a written work could provide backstory, context, and details to inform serious videogame play without interrupting the player's sense of agency to build a unique experience. Additionally, an external work of fiction could separately be read by those unaware of the videogame and thereby motivate the reader to play the health-related game referenced in the story.

To our knowledge, health-related videogames and prose narratives have never been paired in an intervention. Readers may associate a fictional character's issues with their own (i.e., identify with the character) and apply strategies that worked for the character to their own lives. This study explored whether reading prose fiction could generate interest in a health-related videogame, thus making the work of fiction an effective companion narrative to the game. The research also clarified the qualities of story, including genre, preferred by this target audience.

#### **Materials and Methods**

# Sample and recruitment

Eligible study participants were mothers of 3–5-year-old children between the ages of 20 and 40 years who reported difficulty getting their child to eat vegetables. Mothers who experienced no trouble with their child's vegetable consumption or reported dietary restrictions for their child were excluded. Participants were recruited through the Children's Nutrition Research Center volunteer list in addition to posted paper and digital advertisements. Recruitment took place during April and May 2014 and ended when data saturation was reached (n=18). Demographics of the sample are given in Table 1. Approval was obtained from Baylor College of Medicine's Institutional Review Board in March 2014. All participants completed informed consent.

Table 1. Sample Demographics

	Frequency	Percentage
Gender of child		
Boy	12	66.7
Girl	6	33.3
Highest education completed by mother		
Some college	1	5.6
College graduate	9	50
Postgraduate Study	8	44.4
Annual household income		
Less than \$30,000	3	16.7
\$30,000 to \$60,000	1	5.6
Over \$60,000	14	77.8
Ethnicity		
Hispanic	7	38.9
African American	1	5.6
White	7	38.9
Asian, non-Vietnamese	2	11.1
Other	1	5.6
Employed		
Yes	14	77.8
No	4	22.2
Primary responsibility for feeding t	he selected	child
Me	16	88.9
My spouse/significant other	1	5.6
Shared among multiple people	1	5.6
Marital status		
Married or living	16	88.9
with a significant other		
Single, never married	1	5.6
Divorced, separated, or widowed	. 1	5.6

# Story descriptions

Professional writers with experience developing fiction produced two storylines with consultation from food parenting researchers, who guided the portrayal, parenting, and nutrition in each story. Guidance on food parenting practices was based on assessments from health practitioners across six countries. Both stories, *Ninjio* and *Totally Frobisher*, were written as women's literature, a popular genre that features the fictional trials and triumphs of female protagonists. The heroine of each story encounters a smartphone videogame, "Mommio," which helps her improve her child's dietary issues and overcome the story's central conflict. The videogame was carefully integrated into the main plot of the story to maximize and retain the narrative impact of its use. 30

"Mommio" <sup>29</sup> is an actual game currently in development, which will feature details that occur in the storylines, such as the same featured toys, home décor, and pet, and will share challenges ("game quests") that the main character of each story faces, such as getting a small child to accept a vegetable as a snack instead of cookies. Those with exposure to the stories before gameplay will notice these details as familiar backstory and context. The connections from the storyline to the game will be direct, such that the game may help real mothers improve their child's vegetable intake in the same fashion that it helped the main character of each narrative.

An action–adventure story with a touch of surreal science fiction, *Ninjio* is the story of Bonnie, a mother who learns

independence and responsibility after her take-charge husband is deployed in the U.S. Army and goes missing in action. Bonnie is forced to lean on her own mother for help, whose good intentions too often correlate with a hand in the cookie jar. A fictional console videogame (called "Ninjio") becomes reality in Bonnie's dreams and begins to have a real-life impact, which is positively influenced by a smartphone game called "Mommio." The story flips among the real world, the game world, and Bonnie's dreams as she tries to succeed in all three, convinced that conquering them will win the safe return of her husband.

Totally Frobisher is a romantic adventure with a European flair. Thea, a young single mother whose pregnancy was the result of a romance while an art student in Paris, is now living with her parents in Houston. Thea must balance her promising art career with caring for her daughter. Opportunities to advance her career occupy Thea's time as her parents scramble to fill the gaps in raising her daughter. Because of inconsistent parenting, Thea's daughter refuses healthy food, a battle Thea thinks she has lost until help comes from an unexpected videogame, called "Mommio." To complicate matters, an old friend—her child's father—unexpectedly comes back into her life.

#### **Procedures**

Participants were sent short stories (about 40 pages) of both storylines formatted as novellas in their choice of either a paperback or digital file. Participants were given 2 weeks to read the stories, after which a phone interview was scheduled and completed. The qualitative interview contained 20 questions (see Appendix) with probes and prompts and was conducted by interviewers trained in qualitative data collection methods. Four questions were excluded from our analysis because they were asked for future commercialization purposes. Compensation was a \$25 gift card, mailed upon interview completion.

# Data analysis

Interviews were audio-recorded and transcribed verbatim. Transcripts were checked against corresponding audio for accuracy and imported into NVivo software (version 10.0, 2012; QSR International, Doncaster, VIC, Australia). Thematic analysis<sup>31</sup> was used with the research questions posed. Responses were double-coded by question and assessed for agreement. Disagreements were resolved by group consensus.

#### **Results**

The majority of the sample was Hispanic (38.9 percent) or white (38.9 percent), had a male child (66.7 percent), graduated from college (94.4 percent), had an annual household income of over \$60,000 (77.8 percent) and was married or cohabitating (88.9 percent) (Table 1).

Several questions asked thematic opinions of each story. Themes that emerged from the responses are identified in Table 2, accompanied by quotes that best represent commonly reported themes.

#### Ninjio

About one-third of participants reported enjoying the relationships between characters depicted in *Ninjio* (Theme N.1.2), whereas others reported enjoying the strong husband character or relatable issues of nutrition, parenting, and independence (Theme N.1.3).

However, a third of study participants did not like the weakness in which the heroine was portrayed (Theme N.1.4). A few others disliked the surrealism and were confused by the writing style, which alternated among gameplay, dream, and real-world scenarios (Theme N.1.1).

When asked about the main character, the majority of participants mentioned Bonnie's helpless dependence on her domineering husband, resulting in half of all participants being unable to identify with her (Theme N.2.2). Those who identified with the main character often noted struggles with nutrition or independent decision-making as their rationale (Theme N.2.1).

Half of the mothers voiced interest in reading the rest of the story, most commonly noting curiosity to see what happens next (Theme N.3.1). The half who did not wish to finish the story reported not being engaged or found the story too "mancentric" (Theme N.3.2). About a third of mothers interviewed would purchase a paperback or digital copy of *Ninjio*.

#### Totally Frobisher

Participants had differing opinions on what they liked about *Totally Frobisher*, with the interesting plot, descriptive writing style (Theme F.1.1), interesting characters (Theme F.1.3), and emphasis on family values (Theme F.1.2) most often mentioned.

A handful of participants could not offer an element they did not like, whereas a few others mentioned that they wished the plot had more complexity (Theme F.1.4). Although several participants mentioned not identifying with the main character, Thea, of *Totally Frobisher*, several others identified with her because of the variety of relatable issues she faced (Theme F.2.1), including learning from mistakes and balancing work and family. Appreciation of the character's moral integrity was often mentioned in the context of decisions that Thea independently made for her family (Theme F.2.2).

A majority of mothers indicated they wanted to read the rest of the story, mainly because of general curiosity about its resolution (Theme F.3.1). A small handful did not find the material engaging and, thus, were not interested in reading the conclusion (Theme F.3.2). About half of all mothers interviewed would purchase the story as a book, in either digital or paper form.

# Story preference

An overwhelming preference was expressed for the romantic adventure. Twelve out of the 18 mothers favored *Totally Frobisher* over *Ninjio*, citing the story's engaging (Theme F.4.1) and relatable (Theme F.4.2) plot as the main reasons for this preference. Four participants favored *Ninjio*, largely because of its action—adventure theme (Theme N.4.1), whereas the remaining two participants indicated no preference between the stories.

# Thoughts on game application

Most participants mentioned the "Mommio" videogame as a main point of at least one of the stories without interviewer 308 BRAND ET AL.

#### Table 2. Result Themes Ninjio Totally Frobisher 1. What did you like about the Theme N.1.1: Did not like writing style Theme F.1.1: Liked writing style and plot story? What did you not like? and plot "So it's like all of a sudden there's like "So you wonder about certain things this unrealistic part of this very realthat makes you want to keep reading. life description of a person. So it I enjoyed that. I guess it's basically wasn't transitioning well from beplot-driven." coming like to something—a day-today type of story, a real-life story into like this kind of other, more non-real, mythical kind of realm.' Theme N.1.2: Liked family relationships Theme F.1.2: Liked emphasis on family values "I liked that the husband took care of "Everything was based on her daughter. Everything was based around family morals." her. I liked that they seemed to have a good relationship.... I like that the father and son were able to do something together." Theme N.1.3: Found issues to be relat-Theme F.1.3: Liked characters "I felt that I could relate to some of the "I liked the characters in the story, the parenting moments such as the strugmain character. I like that she's in the gling of getting your child to eat, and art world and she's traveling, and it's disagreeing with the grandparent just exciting.' characters, and some of the parenting choices. That felt real to me.' Theme N.1.4: Did not like Bonnie's Theme F.1.4: Plot was too simple weakness "Some of her thoughts seemed like she "Well, and there weren't any plot twists had a mind of her own, but there was or anything. It was exactly what it no action that showed that she did.' looked like on the surface.' "I found the character a little bit frus-"I found it to be not challenging in its plotline.... The plotline was pretty ho-hum." trating...And it seems like, at times, she knows what the right thing is to do. But she just was a weak kind of character." 2. Tell me your thoughts about Theme N.2.1: Found her struggles to be Theme F.2.1: Found her struggles to be the main character in this relatable relatable novella "I could relate to the fact that her kid "Because I think she is not the only one didn't want to eat healthy. I think in the world with this—there are a lot that's a common issue, though." of single moms that are working for their kids and trying to do what they like, what they love, actually.' Theme N.2.2: Bonnie was helpless and/ Theme F.2.2: Predominant trait of integrity and independence or dependent on others "I thought Bonnie was very dependent "I just kind of respected her...that she on her husband, almost to where, you was handling herself and her daughter and trying to kind of keep it all know, not doing anything.' together and do what was right." 3. Would you be interested in Theme N.3.1: Yes, out of curiosity Theme F.3.1: Yes, out of curiosity reading the rest of this story? "I'm kind of curious if they will stay "I was just engaged in the story. I was together after it all" kind of invested in the characters and I wanted to see what happened.' Theme N.3.2: No, the story was not Theme F.3.2: No, the story was not

engaging

(continued)

engaging

Table 2. (Continued)

	TABLE 2. (CONTINUED)	
	Ninjio	Totally Frobisher
	"I felt like the plot was really weak. I didn't understand where the plot was going."	"I just don't find the material to be challenging. And I don't think it's likely that it will develop into an engaging story."
4. Did you like one story more than the other?	Theme N.4.1: <i>Ninjio</i> , more action  "It [ <i>Ninjio</i> ] had more action, more descriptive, scenes with the video game. And there was also a part about a bunny, which it had like different scenes that it was very descriptive and very interesting."	Theme F.4.1: <i>Totally Frobisher</i> , more engaging "I think I might like <i>Totally Frobisher</i> a little bit more, because it was like a heated love story in the beginning. It was just different from real life for me. So it was more interesting in that way."
		Theme F.4.2: Totally Frobisher, more relatable "I can relate more to her. And this one [ <i>Totally Frobisher</i> ], I understood it so much better. I could see myself. And I could relate with myself personally in this book, with this little novella. So that's why I believe I liked the novella."
5. Would you play the "Kiddia" game application that was portrayed in these novellas?	on that was "Yeah. I'd actually like to check it out if there is something I	
	Theme 5.2: Yes, Would at least try it "Because having a child who struggles to personal to me. That's why I'm always I help with that situation."	eat a variety of foods is something very ooking for ways in which to—new ideas to

prompting. When "Mommio" discussion was prompted in the context of its overall impression after reading both stories, all but two study participants said that they would try playing the videogame (Theme 5.2). The majority indicated they would definitely play the game (Theme 5.1). When asked about the "Mommio" videogame presented in the context of each story individually, about half of all participants reported the game to be of interest to them, perhaps because of confounds with individual story preferences. Those who said they would definitely play "Mommio" suggested prices ranging from \$1 to \$3. This suggests that a health videogame's appeal could be significantly broadened beyond those with direct knowledge of the game. Many recognized the "Mommio" videogame was about nutrition and thought it might help them with their own child's vegetable consumption, similar to the way the game helped each story's protagonist.

# **Discussion and Conclusions**

Our results suggest that it is possible to generate interest for a serious videogame through a separate, but companion, fictional story featuring the game. Interest was great enough for some participants to state they would pay for, download, and play the game. Thus, it appears possible to use a separate, but related, fictional story as background narrative for a serious game. However, such companion stories are only effective if the target audience is compelled to read them. Just as romantic fiction is the most popular fiction genre nationally, <sup>10</sup> a romantic adventure was preferred over a

fantasy/suspense story, suggesting our sample may not differ from an undifferentiated group of American women in this respect. However, more comments were made about characters and plot than genre, and thus our conclusions appear to be character and plot-driven rather than genre-centered.

We present several recommendations for similar companion narratives:

- 1. Our audience preferred stories that were both easy to follow and complex in plot.
- The story should be easily comprehended, but also contain twists that make the future of the plot uncertain
- 3. The audience should connect with the protagonist's struggle and her solution.
- 4. The protagonist should start strong, but be realistically flawed and gain more strength throughout the story. This is in contrast to portraying an overall weakness that grows into strength, which our study showed to be off-putting and not relatable to our target population.
- 5. The plot should feature relatable issues, such as parenting and family values.
- 6. To generate real-world relevance to a fictional character's triumph, the story's relatable content should be centered on the issues addressed by the health videogame. This mirrors the tendency of narrative authenticity, <sup>12</sup> in which a narrative's relatability and realism strengthened its appeal as a catalyst for health education.

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Previous works have shown promise using narrative to disseminate health information and promote behavior change, including diet, <sup>32</sup> heart disease prevention, <sup>33</sup> and cancer awareness. <sup>34</sup> This study supports this tendency and extends possible topics to include vegetable parenting practices. Such interventions have been widely disseminated and well received, in part because of the inclusion of input from the target audience in the formative process. <sup>32–34</sup> Findings from our study also provide insight into the thoughts of mothers of preschool children.

While developing a health videogame storyline for presentation through traditional in-game cut-scenes, we discovered narrative presented outside of gameplay offered new opportunities. *Totally Frobisher* is now being novelized as a commercial project with private funding.

This is the first study of its kind and is, therefore, limited in scope. Our sample was small and fairly affluent, which limits generalizability. Participants likely were also subject to social desirability bias due to contact with a researcher, although their critical reviews of the narrative suggest this bias was minimal, if present. More research is needed with larger, more diverse samples to uncover and refine the potential of cross-media promotion of health videogames.

# Acknowledgments

This research was made possible in part by Small Business Innovation Research funding from the U.S. Eunice Kennedy Shriver National Institute of Child Health and Human Development by grant R44HD075521 and by institutional support from the U.S. Department of Agriculture, Agricultural Research Service (Cooperative Agreement 58-6250-0-008).

# **Author Disclosure Statement**

R.B., President of Archimage, is the commercial developer of the "Mommio" videogame and privately funded the *Totally Frobisher* novelization. L.B., A.B., T.O., S.H., J.B., C.D., A.S.L., and T.B. declare no competing financial interests exist.

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# **Appendix: Interview Questions**

- 1. Tell me three or four major points from reading *Ninjio*.
- 2. What did you like about the story in *Ninjio*?
- 3. The opening chapters that you read are about 25 percent of *Ninjio*. Would you be interested in reading the rest of the story?
- 4. Tell me your thoughts about the main character, Bonnie, in *Ninjio*.
- 5. Before we finish, is there anything else you want to tell me about that you haven't had the chance to say about *Ninjio*?
- 6. Now tell me three or four major points from reading the *Totally Frobisher* opening chapters.
- 7. What did you like about the story in *Totally Frobisher*?
- 8. The opening chapters that you read are about 25 percent of *Totally Frobisher*. Would you be interested in reading the rest of the story?
- 9. Tell me your thoughts about the main character, Thea, in *Totally Frobisher*.
- 10. Before we finish, is there anything else you want to tell me about that you haven't had the chance to say about this story?
- 11. Did you like one story more than the other?
- 12. Would you buy a paperback version of the full *Ninjio*?

- a. If yes, ask how much would you pay to buy the paperback version of the full *Ninjio*?
- 13. Would you buy a paperback version of the full *Totally Frobisher*?
  - a. If yes, ask how much would you pay to buy the paperback version of the full *Totally Frobisher*?
- 14. Would you buy an e-book version of the full Ninjio?
  - a. If yes, ask how much would you pay to buy the e-book version of the full *Ninjio*?
- 15. Would you buy an e-book version of the full *Totally Frobisher*?
  - a. If yes, ask how much would you pay to buy the e-book version of the *Totally Frobisher*?
- 16. Tell me your thoughts about the "Mommio" videogame that was portrayed in *Ninjio*.
- 17. Tell me your thoughts about the "Mommio" videogame that was portrayed in *Totally Frobisher*?
- 18. Would you play the "Mommio" game application that was portrayed in these stories?
- 19. How much would you pay for the "Mommio" game application portrayed in these stories?
- 20. Is there anything else you'd like to let us know?