Running head: NARRATIVE

"Almost as necessary as bread":

Why we need narrative and what makes it work

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Qualifying Exam Response

Dr. Sheila Murphy's Question

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What underlying theoretical mechanisms account for the effectiveness of narrative in EE? Which mechanisms would most easily transfer to education more broadly and why? Defend your answer.

"Almost as necessary as bread": Why we need narrative and what makes it work

The eyes of 60+ middle-aged and elderly Cambodians were riveted on Arvind Singhal. The group was gathered in a Long Beach, California Asian fusion restaurant's back room, awaiting a training session sponsored by the upstart Khmer Anti-Poverty Party (KAPP)[1]. While their self-selected party affiliation and presence in the room indicated that these were not "your typical Cambodians," the assembled – simultaneously survivors of the Khmer Rouge's genocide and the friends and relatives of those less fortunate – still bore scars from their experience; namely, a certain degree of distrust towards others, some unwillingness to share resources, and considerable cynicism vis-à-vis government. Arvind was neither a specialist in political organizing nor an expert in post-traumatic stress disorder; nonetheless, it was Arvind's job to train the group.

He grasped the microphone. So did the interpreter since – hadn't we mentioned? – barely anyone understood English. Arvind began with a story…

"Storytelling is not a luxury to humanity. It's almost as necessary as bread. We cannot imagine ourselves without it because each self is a story'' (Stone, 1988, p. 75; cited in Kim & Ball-Rokeach, 2006a, p. 177). In his narrative paradigm, Fisher (1987) conceptualized people as "storytelling animals," suggesting that human communication is largely a storytelling process that should be plumbed for its "narrative rationality." Various other scholars have

[1] The leader of this innovative party is expatriate Daran Kravanh subject of 2000 biography *Music Through the Dark: A Tale of Survival in Cambodia* by Bree LaFreniere)

hailed stories as a universal attribute of humankind (Campbell, 1949/2008), the most natural mode of thought (Schank & Abelson, 1995), a tool for establishing identity (Siegel & Hartzell, 2003), a frame for constructing reality (Berger & Luckmann, 1966), a means to gratify needs (Katz, Blumler, & Gurevitch, 1974; Moskalenko & Heine, 2003), a commodity of enormous value (see Hollywood), and a good ol' way to pass the time. Over the past 20 years, scores of health communication researchers investigating entertainment-education have documented what Aesop's and de la Fontaine's fables long ago established: stories can teach (e.g., Murphy & Frank, in press; Frank, Chaudhuri, Bhanot, Murphy, in press; Murphy, Hether, Felt, & de Castro Buffington, in press; Chatterjee, Bhanot, Frank, Murphy, & Power, 2009; Moyer-Guse, 2008; Bae, 2008; Wilkin, Valente, Murphy, Cody, Huang, & Beck, 2007; Movius, Cody, Huang, & Berkowitz, 2007; Singhal, Cody, Rogers, & Sabido, 2004; Sood, 2002; Papa, Singhal, Law, Pant, Sood, Rogers & Shefner-Rogers, 2000; Lozano & Singhal, 1993).

This paper will investigate narrative's underlying mechanisms – specifically, story structure, involvement, and components of social cognitive theory – that explain entertainment-education (EE)'s effectiveness. First, this paper will provide an overview of EE, and outline how story structure eases learning. Then it will explore the respective definitions, inter-relationships, effects, and measurement tools associated with involvement with narrative (transportation) and involvement with characters (identification, wishful

identification, liking, similarity, and parasocial interaction). Next, it will suggest how involvement facilitates learning. Social cognitive theory's components – modeling, efficacy, and interpersonal conversation – will then be introduced and analyzed in terms of their utility in educational endeavors. Finally, this paper will explore how these mechanisms can and should be applied to education more broadly.

Entertainment-Education

Entertainment-education is a communication strategy that deliberately, inextricably integrates factual information within entertaining media content. Since the extraordinary success of *telenovela Simplemente Maria* (1969-1971), a soap opera that inspired thousands of Latin American viewers to sew and enroll in adult literacy classes (Singhal, Cody, Rogers & Sabido, 2004), EE has been embraced as a serious strategy and subject of scientific inquiry. Because of its low entry barriers, public health-oriented EE is usually aimed at the disenfranchised, particularly within the developing world. Individuals need not possess literacy skills in order to listen to a radio program, watch a television show, or follow an illustrated comic book, nor do they require familiarity with a highly specific vernacular, capacity for processing technical data, or self-efficacy around health or education. Thus, EE has been identified as a viable and, importantly, cost-effective means to deliver public health information to mass and/or hard to reach audiences (Valente, Murphy, Huang, Greene, Gusek, & Beck, 2007; Bouman, 2004).

For similar reasons (e.g., limitation in terms of literacy skills and capacities for managing cognitively challenging content), children have been another intended audience for EE. While public health motivations have inspired some youth-directed programs (Rosen, Brody, Zucker, Manor, Meier, Rosen, Lev & Engelhard, 2010; McKee, Carnegie, & Shahzadi, 2003), EE producers have also sought to support children's literacy development (Fisch & Truglio, 2001), critical thinking and academic achievement (Crawley, Anderson, Santomero, Wilder, Williams, Evans, & Bryant, 2002; Anderson, Bryant, Wilder, Santomero, Williams, & Crawley, 2000), language acquisition (Felt, 2004; Linebarger & Kosanic, 2001; Huston & Wright, 1998; Rice, Huston, Truglio, & Wright, 1990; Lemish & Rice, 1985; Rice & Woodsmall, 1988), and tolerance, inclusiveness[2], and other social and emotional skills (Cole, 2009; Fisch, Yeh, Zongkui, Jin, Hamed, Khadr, Noriega, Gemark, Druin, & Guha, 2009; Warshel, 2007; Brenick, Lee-Kim, Killen, Fox, Raviv, & Leavitt, 2007; Cole, Arafat, Tidhar, Tafesh, Fox, Killen, Ardila-rey, Leavitt, Lesser, Richman, & Yung, 2003; Soul City Institute, 2001). Like the previous literature cited, these goals were successfully achieved via EE.

While EE's suitability for challenged audiences has been demonstrated, it is likely that EE is an effective tool for attracting and educating all audiences, regardless of their ability to read or synthesize scientific information. Murphy, Baezconde-Garbanati and colleagues are currently testing this hypothesis in an

[2] Interestingly, Mares and Acosta (2010) found that two inclusiveness-themed episodes of general audience programs (*Arthur* and *Sagwa, the Chinese Cat*) did not improve children's sense of inclusiveness because they did not understand the significance of the stories – they did not develop generalized understandings vis-à-vis tolerance from these specific tales.

innovative study that compares the impact of narrative versus non-narrative media products across multiple platforms upon diverse groups' knowledge, attitudes, and practice (KAP). Why does narrative make a difference?

Narratives Ease Learning

Story Structure

Story structure eases learning because it is familiar, emotional, and concrete. Some theorists allege that life itself is made sense of in story form, processed by stringing events in a linear, cause-and-effect fashion, featuring protagonists and antagonists, inciting incidents, climaxes, denouements, and culminations. According to scholars of human development (e.g., Siegell and Hartzell, 2003) and experts in social identity theory (e.g., Markus & Nurius, 1986), the stories we construct about ourselves function as tools for integration and motivation, appreciably impacting attitudes and behavior. Schank and Abelson (1995)[3] allege that long-term memory is represented in story form while Baumeister and Newman (1995) assert that it is easier to generate a mental representation in narrative than propositional form, which suggests that our brains are hard-wired for narrative.

Even if one rejects these naturalistic, subconscious processes, it cannot be denied that, across cultures, storytelling is an important activity that is commonly shared from the time people are young (and is often directed at youth in particular). Most individuals, therefore, adults and children alike, are quite familiar with story schemas, or the basic structure of stories. Research on

[3] and refuted by Wyer (1995)

information processing has found that prior knowledge facilitates acquisition of related content (Norman & Bobrow, 1976; Shiffrin & Schenider, 1977). This expertise in story schemas may explain why their presence aids in comprehension and recall (e.g., Thorndyke, 1977; cf. Mandler & Johnson, 1977) – familiarity with stories functions as an advanced point of departure from which to process and build new knowledge.

Emotion

Stories both convey emotional content and tend to produce emotional reactions and connections. In fact, emotional narratives have been found to be particularly gripping and persuasive (Dillard & Peck, 2000). Perhaps this is because emotion is a key ingredient of learning. Cutting-edge theorists from neuroscience and education proclaimed, "Learning, attention, memory, decision making, and social functioning are both profoundly affected by and subsumed within the processes of emotion; we call these aspects *emotional thought*" (Immordino-Yang & Damasio, 2007, p. 3). Uniting knowledge with emotion can increase its salience, attracting greater focus in the short term and deeper impressions over the long term. Indeed, Appel and Richter (2007) testified to participants' superior recall of narrative content vis-à-vis non-narrative content. But EE isn't interested in only capturing viewers' attention and stocking their memory with story-related information; it is usually designed to facilitate behavior change, a process that first requires viewers to transfer story-related lessons to personal situations. These authors contend, "emotional processes are required

for the skills and knowledge acquired in school to transfer to novel situations and to real life" (Immordino-Yang & Damasio, 2007, p. 5). While Immordino-Yang & Damasio (2007) characterize emotion as a basic form of decision-making (p. 7), Nabi (2002) claims that emotions are organizers and motivators of behaviors[4]; both visions help to explain the effectiveness of EE.

In order to achieve educational ends, however, narratives should not provoke excessive emotion. Fisch (2004) contended that plotting emotion's relationship with learning resembles a U-shaped curve – more emotion is optimal up until a certain point, at which time increases in emotion diminish educational outcomes (p. 183). This might explain why, in a recent EE study (Murphy, Frank, Moran, & Woodley, 2009), viewers who were highly involved with a character who got cancer were less likely to show gains in knowledge regarding lymphoma and cancer more generally at the conclusion of the storyline than viewers who were less involved (p. 22). Researchers from diverse fields support the assertion that processing of excessive emotion monopolizes attention and degrades capacity to engage in more peripheral activities. Hoffman (2000) argued that overarousal triggered self-focused personal distress and repair rather than other-oriented responses and prosocial behavior – simply, the extent to which an emotional flooded individual can attend to another is compromised. Eisenberg and Fabes (1990) empirically supported this claim. So it would appear that emotion is a commodity whose dosage needs to be sensitively considered.

[4] Nabi (2002) notes, however, that more research is required in order to determine which emotions, if any, are better suited for promoting certain types of behaviors than others (p. 303).

Accessibility

Finally, narratives deliver relatively concrete information rather than abstract, decontextualized facts. This increases the information's vividness and quantity of links to other nodes within a knowledge network, both of which improve its heuristic accessibility (Shrum, 2002) and so predict its future use. Narratives' one-to-one representation of knowledge – that is, teaching about real life via real life (or verisimilar) examples – also makes it more accessible and easier to put into practice. Fisch (2004) cautions, though, that "… a reliance on surface structure similarity can actually impair performance via negative transfer of inappropriate strategies that seem appropriate to the learner only because of the similar contexts in which they were embedded" (p. 172) – in other words, sometimes viewers erroneous apply information, especially when various types of information seem similar. This boomerang effect, or provocation of the desired behavior's polar opposite, has occurred in the EE arena (e.g., Bensley & Wu, 1991). Whereas modeling the behavior of attractive characters is key component of EE,[5] this has backfired when viewers identified with antagonists or transitional role models prior to their crucial evolution and so reproduced their negative actions. Rather than offering explicit instruction (which risks didacticism, a death knell for EE), better differentiating between disparate objects is a way to guard against learners' confusion and inappropriate application of program content.

[5] (Bandura's social cognitive theory (SCT; 1977, 1986, 2002, 2004), which will be explored in depth later in this paper)

Involvement

Narrative-based learning is also facilitated by audience members' involvement with storyline and characters. The concept of involvement is simultaneously rich and complicated, offering great explanatory power and a thicket of interrelated concepts and phenomena whose nature still remain to be conclusively differentiated theoretically and empirically. Encouragingly, works published in the past five years have made significant progress towards elucidating where transportation, identification, liking, wishful identification, similarity, and parasocial interaction start, end, and interact with one another.

Involvement with a Narrative (Transportation)

Involvement with a narrative, termed transportation (Gerrig, 1993; Green & Brock, 2000), refers to "the process of becoming fully engaged in a story" (Green, Brock & Kaufman, 2004, p. 312). Transportation has been analyzed in many investigations of media effects and seems to predict desired outcomes; specifically, transported viewers are more likely to report superior enjoyment, recall, story-related attitudes and beliefs, knowledge gains, intention to perform a behavior, and rates of behavior change than non-transported viewers (Murphy, Hether, Felt, & de Castro Buffington, in press; Murphy, Frank, Moran, & Woodley, 2009; Green, 2004; Green & Brock, 2000).

Transportation vs. identification.

Certainly, the phenomenon of narrative absorption or engrossment, of losing one's sense of self and feeling "lost" in a story (Nell, 2002), is commonly

experienced. Yet just what is transportation? To what extent does this involvement with a narrative differ, if at all, from involvement with a character (known as identification[6])? How are the two concepts related chronologically and in models of narrative influence vis-à-vis mediation, moderation, and outcome? The original vision offered by Green and Brock (2000) was somewhat vague: "… an integrative melding of attention, imagery, and feelings… a convergent process, where all mental systems and capacities become focused on events occurring in the narrative" (p. 701). In subsequent literature, identification has appeared as a constituent of transportation (Sood, 2002), while the same process described as transportation (e.g., absorption, or the loss of self-awareness during exposure) has appeared as a constituent of identification (Moyer-Guse, 2008, p. 4110). When one considers this theoretic ambiguity, the fact that some empirical studies have struggled with multicollinearity between the two constructs should come as no surprise (H. Hether, personal communication, January 2, 2011).

Definitions.

Moyer-Guse (2008) waded into these murky waters, admitting that while a dimension of identification overlaps with transportation, the two still significantly differ conceptually. Cohen and Talor (2008)'s empirical study confirmed this assertion. Transportation implies involvement with a narrative's plot, observation within the story world from the vantage point of a spectator that is not necessarily

[6] although this term is even more problematic

one's conscious self[7]. Identification, meanwhile, implies involvement with a specific character and participation within the story world from the vantage point of that character – "merging with the character and sharing the character's knowledge about the narrated events, sharing the character's goals (i.e., hoping that they succeed) and sharing the character's emotions (Cohen, 2001)" (Cohen & Talor, 2008, p. 6).

Predictors.

The predictors of transportation and identification are also different. Following Zillmann (1991), Cohen and Talor (2008) found that suspense predicted transportation, as anticipation of a future negative event drew viewers into a story and gave the illusion of "being there" (Gerrig, 1993); suspense, however, did not lead to identification. Rather, as Bandura (1977, 1986, 2002, 2004) theorized and several studies have confirmed (Wilkin, Valente, Murphy, Cody, Huang, & Beck, 2007; Hoffner & Cantor, 2001; Hoffner, 1996), positive evaluations of a character predicted identification (Cohen & Talor, 2008). This appraisal did not affect transportation.

Temporal relationship.

Murphy et al (2011) accepted Moyer-Guse (2008)'s entreaty to empirically elucidate the temporal order between transportation and identification. Noting various researchers' postulates that involvement with a character may precede transportation (Cohen, 2001; Green, Brock, & Kaufman, 2004; Slater & Rouner,

[7] Tukachinsky (2011) claims that transportation can occur without the suspension of self-identity (p. 9). Rather than transportation triggering a loss of one's sense of self, it may simply trigger the loss of one's sense of reality – time and/or place.

2002; Cohen, 2006) or follow it (Cohen, 2001; Green, 2004, Slater & Rouner, 2002; Cohen, 2006), this research team's investigation of 212 viewers of *Desperate Housewives* found that the relationship between the two constructs was reciprocal. The more viewers identified with a character at baseline, the more likely they reported transportation at follow-up; meanwhile, at follow-up, the relationship between identification and transportation was positive and direct – "the more the viewer is transported by the narrative, the more they come to identify with the character featured" (Murphy et al, 2009, p. 21)

Effects.

Effects produced by transportation versus identification within studies also seem to differ, although these differences have not held constant across studies. In their 2011 investigation, Murphy et al (2009) found that identification predicted higher levels of transportation, negative emotion, and positive emotion, whereas transportation strongly predicted knowledge, attitudes, and behaviors associated with the subject of the narrative (p. 23). But in a subsequent study, findings intimated "…that transportation into the narrative may be more likely to sway attitudes, whereas involvement with a specific character may be superior with respect to knowledge acquisition" (Murphy et al, in press).

Measures.

Utilization of different measurement tools – specifically, a revised version of Green and Brock (2000)'s transportation scale and more universal adoption of Cohen (2001)'s identification scale – may help to standardize results. According

to Slater, Rouner, and Long (2006), Green and Brock themselves had difficulty detecting variability in transportation with their scale in the context of a study that analyzed a high-quality excerpt from a best-seller; the scale worked best vis-à-vis a less immersive, less externally valid text (p. 250). While a threshold effect for transportation may exist, whereby variability in transportation matters little once viewers' engagement reaches and/or surpasses a certain level (Slater, Rouner, & Long, 2006), inadequacy of the measurement instrument may also explain lack of results.

Indeed, since it was originally constructed for literature, two of the scale's twelve items that pertain to an audience member's capacity to picture narrative events and construct a vivid image of characters, respectively (Green & Brock, 2000, p. 704), are inappropriate for investigations of visual stimuli[8]. Dropping these items means that the authors' original Cronbach's alphas are irrelevant and the revised scale must be re-valdiated. Murphy and colleagues (2009) cite personal communication with communication scholar Joseph Cappella as affirming that a nine-item version of the scale has good predictive validity; however, this evidence is vague and begs the question, why nine items instead of ten? Factor and reliability analysis inspired further omission of two reverse-coded items[9], reducing the scale to seven items (Cronbach's alpha .87). In

[8] The first of these items appears in the 11 general items, while the second is labeled as specific to a particular experiment; however, this "specific" item has the same stem (e.g., "While reading the narrative I had a vivid image of ____") and only varies with respect to character name.
[9] Since there were originally three reverse-coded items in Green & Brock (2000)'s scale, the extra item omitted in Capella's version must have been one of these that was reverse-coded.

general, reverse-coded items are problematic and often compel investigators to either throw them out or to group them as a separate factor.

This latter alternative vis-à-vis reverse-coded items was embraced by Cohen and Talor (2008), who also reduced Green and Brock's original scale (dropping items that pertained to visualization, relevance, interest in resolution, and influence on the life of viewers) yet failed to report whether they conducted reliability analysis. Assuming that their seven-item scale is valid, its two-factor solution is quite compelling, with "four items related to experiencing the narrative from within (being able to imagine, being mentally involved, wanting to know how the film ended and being emotionally affected – *these were reversed coded* [emphasis added]) and the second was an attention sub-dimension concerned with paying close attention to the narrative (thinking about surroundings, stopped thinking about the clip after viewing, wandering thoughts during viewing)" (Cohen & Talor, 2008, p. 13). This study also confirmed that five items from Cohen (2001)'s identification scale constituted its own factor.

So it would seem that Green and Brock (2000)'s scale is revised in popular practice and should be formally introduced to the research world as a validated, parsimonious scale. Not only would this deliver a more precise instrument potentially better able to measure popular narratives (e.g., mass distributed television shows and films such as *Desperate Housewives, Law & Order: SVU,* and *The Brothers McMullen*), but it might serve as a more productive point of departure for other revision-oriented researchers. The

dimensions of experiencing the narrative from within and attending closely to the narrative deserve further investigation and development; for example, do the items identified by Cohen and Talor (2008) tap these constructs exhaustively?

Involvement with Characters

In terms of involvement with characters, consensus is still required around definitions and measurement approaches for identification, liking, wishful identification, similarity, and parasocial identification.

Identification.

As previously stated, identification is an empathic process (Hoffman, 2000; Eisenberg & Fabes, 2001; Zillmann, 1991; Miller & Eisenberg, 1988; Bryant, 1982; Davis, 1980; for a review, see Eisenberg & Strayer, 1990) in which viewers feel as if they were a specific character, engaging affectively by matching the character's emotional state and/or facial expressions, as well as engaging cognitively by taking the perspective of the character. Moyer-Guse (2008) contends that identification also boasts two more components beyond the affective and cognitive: motivation (internalizing the character's goals) and, as aforementioned, absorption (p. 410). While the general label of identification has been (mis)applied to some and/or all of the remaining elements, identification should be understood as distinct, with "involvement with characters" operating as the umbrella term.

Liking.

Liking is relatively straight-forward – it simply means approving of a character (Moyer-Guse, 2008). Liking often leads to identification (Cohen & Talor, 2008; Cohen, 2001), but neither does it always lead to identification nor does identification necessarily require liking – while empirical work still has yet to confirm this, a hypothetical case could be made for viewers "slipping into the shoes" of a vivid but unlikable character.

Wishful identification.

Liking could also lead to wishful identification, or the desire to be like a character, "to emulate the figure" (Giles, 2002, p. 12). In her 1996 study of 155 7- to 12-year-olds, Hoffner (1996) found that girls experienced wishful identification towards attractive female characters and intelligent, humorous male characters. Boys only wishfully identified with intelligent male characters. Examining 208 young adults, Hoffner and Buchanan (2005) found greater wishful identification with: same-gender characters; characters who seemed more similar in attitudes; and characters who were successful and admired. This element of wishful identification factors plays a central role in EE's theory of change[10].

Similarity.

Similarity refers to the degree to which viewers perceive congruence between themselves and a character. This similarity may pertain to any attribute deemed salient by the viewer, e.g., physical, ideological, demographic, etc, and

[10] (via Bandura's social cognitive theory (SCT; 1977, 1986, 2002, 2004), which will be explored in depth later in this paper).

need not be *actual* or confirmed by others' assessments, merely perceived by the viewer. Similarity may lead to liking, as homophily theory suggests; however, both the literature and real world experience confirm that similarity dos not always lead to liking, nor does liking require similarity. Similarity may also facilitate identification, as familiarity might increase accessibility; again, however, such a relationship is neither assured nor required. The relationship might also be bidirectional – once viewers have experienced identification with a character, they may be more likely to perceive similarities between themselves and the character. This may be an interesting pre-test/post-test study to conduct.

Parasocial interaction (PSI).

Parasocial interaction (PSI) traces its roots to Horton and Wohl (1956)'s examination of "intimacy at a distance." This phenomenon can be understood as individuals' perception of a relationship, usually a friendship, with distant others. The fact that PSI can occur with corporeal others, not just mediated individuals, bears mention. Any individual with whom one is not personally acquainted but whom one feels one "knows" may be the object of a parasocial relationship. For example, students may experience PSI vis-à-vis a professor who relates personal anecdotes to a brimming lecture hall but does not engage in one-on-one conversations with these students. McQuail, Blumler, and Brown (1972) identified PSI as supporting a sense of companionship and personal identity for those in its throes.

A comprehensive review of PSI (Giles, 2002) offered three levels of PSI, progressing from characters whose communication situations were most similar to real life (e.g., humans, as themselves, directly addressing the user) to less authentic (e.g., humans, as characters, addressing one another within a narrative) to least authentic (e.g., fantasy or cartoon figures enacting behaviors). This vision deserves some critique, as individuals tend to anthropomorphize and react to non-humans (e.g., their pets, their computers (Reeves & Nass, 1996)) as though they were people. EE television show *Dora the Explorer* (Viacom, Inc., Walsh, Gifford, & Weiner, 2000) has its animated protagonist directly address young viewers; the extent to which their PSI with Dora is inferior to their PSI with a real person – Steve from *Blue's Clues* (Viacom, Inc., Kessler, Santomero, Johnson, 1996), for example – could be investigated in a future study.

"Realness" aside, with whom one connects may be a function of the character and the viewer, while how one connects may be a function of the viewer. Girls reported PSI with attractive female characters and attractive, intelligent male characters, while boys only reported parasocial relations with strong male characters (Hoffner, 1996). Cohen (2004)'s investigation found that viewers' attachment styles predicted the intensity of their distress around "breaking up" with a parasocial relationship partner. So the extent to which one bonds to a character may be a function of viewers' own psychological makeup.

How to measure PSI, however, is problematic. Auter & Palmgreen (2000) validated a scale whose items and factor loadings do not harmonize with the

definitions presented in this paper. This assessment of PSI asks participants about the extent to which they identify with, are interested in, perceives group-level similarity with, and approve problem-solving skills of their favorite character. None of these dimensions are necessary for feeling like one knows and/or has a relationship with a character; moreover, the dimension of identification is mislabeled – its items actually tap liking – and it, as well as "group identification/interaction" overlap with the constructs of liking and similarity, respectively (p. 82). Giles (2002)'s model of PSI's stages of development articulates how PSI may lead to modeling, interpersonal communication, and reflection – behaviors that support EE's effectiveness – as well as efforts to establish a social relationship (p. 297). In order to ascertain the degree to which PSI supports EE, developing a more conceptually sound scale is imperative.

Effectiveness

Involvement is a mechanism responsible for EE's effectiveness because it mediates the relationship between exposure to content and embracing new knowledge, attitudes, and practices by enhancing appeal, increasing emotional connections, and reducing resistance (e.g., reactance, counterarguing). These outcomes set the stage for EE's embedded information to affect viewers.

Enhancing appeal and increasing emotional connections.

The saying goes, You can lead a horse to water but you can't make it drink. Making it drink is the second part, though, and first things first – first you've got to get it there. That horse sure isn't drinking if it's nowhere near the water.

This analogy can be applied to educational endeavors. One may create a high-quality product but if it never crosses the path of the intended audience, then they will not learn from it; whether they could have learned from it is academic. EE offers involvement with narratives and characters; because involvement is appealing, it draws individuals into the "sphere of influence," so to speak. Products that do not offer this opportunity for involvement have a lesser appeal and so fewer individuals choose to attend to the messaging. Reducing the size of the self-selected participant pool reduced limits the scope of the product's impact.

There are several reasons why involvement is appealing. The transportation and identification dimensions of involvement offer individuals an opportunity that "somewhat resembles flow, or optimal experience (e.g., Csikszentmihalyi, 1990), brought about by absorption in an activity and often marked by a deep sense of enjoyment" (Green, Brock & Kaufman, 2004, p. 315). It can be thrilling to engage all of one's senses and focus on a singular object; it is possible that such an activity is especially gratifying today for the sheer novelty of it, as multi-tasking increasingly becomes the norm and so individuals' attention is either fractured (continuous partial attention) or parceled out rapidly in short bursts. Via transportation and identification, viewers can also feel present or a part of epic tales, unique journeys, and/or special relationships. This may be appealing because individuals often crave: participation in something larger than themselves (a distinguishing characteristic of epics); escape from reality (either from one's immediate environment and/or one's self-awareness (Moskalenko &

Heine, 2003)); identity/role play (enabled by inhabiting the non-descript persona of spectator or the specific character with whom one identifies); emotional stimulation (for the sheer pleasure of feeling or for catharsis); new experiences; self-realization; and connectedness with others (Tukachinsky, 2011; Green, Brock & Kaufman, 2004). The other dimensions of involvement are appealing because they can deliver: goals, role models (wishful identification); positive affect, friendly fellow feeling (liking); a sense of normativity/acceptability, glamour/desirability (similarity); and community, relationship(s) (PSI).

Increasing emotional connections.

For these reasons, involvement also increases emotional connections.[11] This is important from an educational standpoint because emotion-eliciting material is more easily encoded, stored, and retrieved (Lang, 2000; Epstein & Pacini, 1999).

Reducing resistance.

Involvement reduces resistance – specifically, reactance and counterarguing. Knocking down these cognitive barriers or, perhaps more accurately, neglecting to trip the wire that instigates wall building, allows material to affect people. While the form of this effect is usually conceptualized as persuasion, it could also be education. In the case of EE, which seeks education as an end in itself as well as a means to behavior change, both education and persuasion are essential.

[11] As previously explored, narratives are a portal to emotional worlds and tool for stimulating emotional reactions, while identification entails empathy, "an affective response more appropriate to another's situation than one's own" (Hoffman, 2000, p. 4)

Reactance.

Reactance is “a reaction against change in response to some perceived pressure for change (Knowles & Linn, 2004)” (Moyer-Guse, 2008, p. 414). In the case of communication with an agenda, such as persuasive or educational communication, members of the intended audience may reject it outright in order to protect their sense of freedom and/or reassert their independence. EE has been characterized as a Trojan horse, sneaking information behind enemy lines without the other side realizing. Reactance may never manifest because the non-didactic content is not interpreted as an infringement upon liberty of thought or action.

Even if viewers do note the perspective of the mesSAGE, involvement may still sidestep reactance. With transportation and identification, viewers are not themselves, so to speak, and so would not feel compelled to engage in the self-protection of reactance. In the context of scripted stories (as opposed to interactive games), individuals experiencing identification cannot access reactance on behalf of their character because they are neither piloting the narrative nor directing the character’s emotional reactions – they are merely sharing in them, going along for the ride. So, if a character is affected by a message, then a truly involved viewer will be too. When viewers experience the other dimensions of involvement, they may forego reactance because of their positive feelings toward the deliverers of the message – the characters. Rather than anonymous spouters of self-interested information, characters may be

viewed as aspirational, likable, similar friends whose objectives are noble and whose perspectives are worth considering.

Counterarguing.

Counterarguing is a process of disputing assertions or, as the term would imply, offering counterarguments. This activity plays a role in the Elaboration Likelihood Model (ELM; Petty & Cacioppo, 1986) and its revision, the Extended Elaboration Likelihood Model (Slater, 1997), both of which attempt to articulate of how individuals process information. These models offer two pathways for processing, central and peripheral. Along the central route, considerable cognitive resources are expended; information is elaborated upon by reflecting and/or counterarguing and internalized – it is harder to forget and to transform (e.g., change a person's mind once they have arrived at a conclusion) information that has been centrally processed. Along the peripheral or heuristic route, fewer cognitive resources are expended; information is simply rejected or accepted at face value, and while the entry barrier is lower, the long-term value of this information is also lower – it is more transient and more fickle than centrally processed content.

The E-ELM posits that, due to entertaining content's hedonic value and (presumed) lack of ideological threat, they are likely to avoid defensive counterarguing. The likelihood of counterarguing is also diminished in cases of involvement because viewers are less motivated and/or able to counterargue, for engaging in this cognitive refutation would interrupt absorption, require self-

awareness, and pit them against their aspirational, likable, similar friend. Rouner (1987) contends that whether the content is processed centrally or peripherally depends upon the intensity of viewers' interest and/or involvement with the narrative. The extent to which viewers identify a message as relevant to either their personal outcome or impression/persona also predicts central or peripheral processing. Producers of EE, therefore, should create products that are sufficiently entertaining, whose persuasive subtext is unobtrusive (Slater & Rouner, 2002), that engages viewers' interest and involvement, and strikes viewers as personally meaningful.

Other?

According to Murphy, Hether, Felt, & de Castro Buffington (in press), "Audiences also may harbor less resistance to content from narrative rather than didactic sources (Brown & Walsh-Childers, 2002; Singhal & Rogers, 1994; Slater, 1997; Slater, 2002; Slater & Rouner, 2002)." Whether this is due to reduced reactance, reduced counterarguing, or some other process (e.g., selective avoidance) is uncertain. A process whereby participants narrate their emergent thoughts (e.g., a cognitive walkthrough or think aloud) might shed light on this question; however, it would also prevent transportation and identification and may interfere with viewers' abilities to become otherwise involved with characters, which would considerably diminish its value. A post-viewing survey asking participants to report what had gone on in their heads as they were watching might be employed, but this requires meta-cognitive access that might

eclipse the average viewer. It could also deliver unintended effects, as in the case of a media literacy intervention that informed participants of a photo's retouching and led to participants feeling worse about their bodies (Harrison, 2009). While obtaining information could "win the battle" of elucidating cognitive processes, it may "lose the war" by raising viewers' consciousness to EE's agenda and informing them of the mechanisms they can use to consciously reject EE messaging.

Social Cognitive Theory (SCT)

Social cognitive theory (SCT; Bandura, 1977, 1986, 2002, 2004) envisions the relationship between self and society as transactional. Its triadic recriprocal causation contends that personal factors, behavioral patterns, and environmental events "operate as interacting determinants that influence each other bidirectionally" (Bandura, 2002, p. 121). Rather than masters of their domain or puppets on a string, as more simplistic theories might imply, SCT positions humans as agentic, self-regulating actors, motivated by efficacy, sensitive to modeling, embedded in networks.

Modeling

Certainly people learn through direct experience; Bandura argues that human survival has depended upon people's ability to learn through vicarious experience as well. Observing people's actions and the consequences of these actions delivers valuable information and has "the power to activate and channel behavior when they are good predictors for observers that positive results can be

gained by similar conduct" (Bandura, 2002, p. 138). Two important ideas are implied therein: first, that people are motivated to succeed; second, that people are more likely to enact modeled behaviors if they believe in the utility of these behaviors and their ability to enact them. Attractive and/or similar models also heighten people's interest in appropriating behaviors as they may seek to resemble or ingratiate themselves to the attractive or believe more strongly in their ability to pull off the same feats as similar others (a phenomenon known as social proof). Shakespeare (1623) got it right – all the world is a stage.

Thanks to mass media, personal, portable media devices, and the world wide web, our access to these "stages" has proliferated and their content circulates worldwide. Some communication scholars (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002; Shrum, 2002) believe that the behavior modeled by personalities and characters may cultivate in viewers certain beliefs and inspire imitation. Depending upon the nature of the behavior and one's point of view, this can come to good or ill. "In sum, modeling influences serve diverse functions – as tutors, motivators, inhibitors, disinhibitors, social prompters, emotion arousers, and shapers of values and conceptions of reality" (Bandura, 2002, p. 139).

EE relies upon SCT in its theory of change. By offering attractive and/or relatable models (especially transitional role models, or individuals who explicitly go through the behavior change process), and by modeling the successful

outcomes obtained by performing desirable behavior, EE practitioners hope to increase the likelihood that viewers will act accordingly.

Efficacy

"Efficacious modeling not only cultivates competencies but also enhances the sense of personal efficacy needed to perform knowledge and skills into successful courses of action" (Bandura, 2002, p. 140). Efficacy is understood as a key motivator of behavior and plays an important role in several prominent behavior change models (Azjen & Fishbein, 1980; Fishbein & Yzer, 2003). Bandura distinguishes among types of efficacy. Self-efficacy refers to a belief in one's capacity to produce effects. While researchers may long for a single self-efficacy scale, Bandura recommends construction of separate self-efficacy scales for discrete activities. One might conclude that Bandura believes the extent to which a global sense of self-efficacy is predictive of a given behavior is limited.

When collective and/or complex tasks are concerned, even issue-specific self-efficacy may fail to predict behavior; this is where collective efficacy comes into play. Following Bandura (1997), Papa et al (2000) define collective efficacy as "the degree to which individuals in a system believe that they can organize and execute courses of action required to achieve collective goals" (p. 36). EE interventions have analyzed both self-efficacy and collective efficacy, although not in equal measure across time or place. Whereas self-efficacy was the object of interest in the past, collective efficacy is growing in prominence; additionally,

self-efficacy seems to be examined more in the West while collective efficacy is investigated more in the developing world.

Interpersonal conversation

As previously stated, storytelling is a way of making sense of the world. While people can and do (and should!) tell stories to themselves, people most commonly share stories with others. Telling stories and generally engaging in conversation (which, it can be argued, is narratively framed) extends EE's SCT-mediated impact in three ways: first, by offering viewers a context in which to "bridge the gap between their own lives and the entertainment-education programs" (Sood, 2002, p. 167), or clarify understandings, engage in translation, and envision contextualized application of modeled behaviors; second, by boosting viewers' sense of the normativity, attainability, and positive outcome expectancies associated with the modeled behaviors; and third, by providing a staging ground for adoption of the modeled behaviors.

The two-step flow theory of media effects (Katz & Lazarsfeld, 1955) argued against an all-mighty vision of media, claiming that influence is transmitted interpersonally, between opinion leaders and community members, within the context of conversation. This vision is too limited, just as powerful effects theories are overblown. Interpersonal conversation isn't a prerequisite for media impact – the lengthy examination of involvement attested to that. However, interpersonal conversation can optimize media impacts by helping viewers to establish a context – the conversation, the interpersonal relationship between

discussants, and eventually, the community – in which change can occur. Desire to discuss media may inspire neighbors to reach out and talk to someone, and so media may set the agenda for initial discussions (McCombs & Shaw, 1972), but due to human nature, discussions will inevitably segue into other topics; a likely topic is the common thread that unites neighbors: the community. According to Kim & Ball-Rokeach (2006), telling stories about the community ”is a key to having a higher level of collective efficacy; it is part of the imagining of ‘‘we,’’ thus of ‘‘We can do it”” (p. 416). In other words, community storytelling seeds collective efficacy by enabling dialogic construction and mental representations of the collective itself. Conversations that explicitly support the group’s capacity, either by expressing confidence or making plans or reporting success, also, of course, support efficacy.

Empirical research has found that interpersonal conversation does make an appreciable difference in social change interventions (Sood, 2002; Papa et al, 2000; Murphy & Frank, 2011; Frank et al, 2011; Bingham, Drake, Goodyear, Gopinath, Kaufman, & Bhattarai. 2010). Notably, in Chatterjee et al (2009)’s study, interpersonal conversation (as well as self-efficacy) improved the structural equation model that depicted the pathways amongst knowledge, attitudes, and practice in a campaign intended to normatize condom use in India. Results also showed that the identity of conversational partners was important for predicting behavioral change. “In short, it appears that viewers were more likely to talk *either* to their family *or* to their friends about HIV prevention; and those who

talked to their family were more likely to follow through in terms of their own safer sex behavior" (p. 626). This suggests new areas for inquiry (e.g., the nature of family and peer communication broadly and by culture) and intervention (e.g., normatizing certain conversational topics amongst interlocutors).

Broader Educational Implications

Fortunately, this rich body of knowledge relates to education more broadly defined. By appropriating narrative, involvement, modeling, and interpersonal conversation for general educational endeavors, the learning process can be made more enriching and enjoyable, while its outcomes can skyrocket.

Narrative

Stories increase motivation, a necessary precondition for learning, because they "… set the stage for meaning" (McGonigal, 2011). They help learners to conceptualize *why* –why they should be in school, for example, why they should care about certain topics, and why certain things are as they are. The stories we tell about students' potential, the demands of the future, and the mysteries left to unravel can powerfully inspire learners to show up, work hard, and make discoveries. Narrative can also bring a learning arc to a close, as students are often tasked to write a report or make a presentation; to tell the story is to own the material.

Gee (2008) presents the "situated learning matrix," an articulation of how narratively-affected elements, such as identity, goals, norms, contextualized exploration, and interpersonal conversation, fuel the learning process. Citing Chi,

Feltovich, and Glaser (1981)'s investigation of physics students, Gee (2008) maintains, "for students in school, there is clear research that shows that content divorced from the Situated Learning Matrix is inert and unable to be applied in practice, however much the student may pass multiple choice tests" (p. 27).\

Good games – which, by definition, involve narrative elements – meet the conditions for operation within one's zone of proximal development (Vygotsky, 1978), where one is challenged just beyond one's limits, yet not so challenged that a learner becomes overwhelmed and shuts down. In this scenario, learning potential is optimized and individuals can experience flow, or "the satisfying, exhilarating feeling of creative accomplishment and heightened functioning" (Csikszentmihalyi, 1975, p. xiii).

Involvement

Narrative can also be used as a context within which to learn, as the exploration of EE demonstrated. Instructionist games – that is, games that have been designed to lead learners through an informationally rich process – can be used in order to engage students with material (Kafai, 2006). Enjoyment of plot and characters can increase motivation and engagement, drawing learners in and causing them to care. Involvement with narrative or characters can engage more emotionally with the content. According to Gee (2008),

> … both thinking and learning depend on emotions. Learning involves not just the cortex (or "higher" intellectual functions), but the whole brain, including the amygdalae, the limbic system, and the cortex. Emotion appears to be a key source of motivation for driving thinking, learning, and problem solving. Video games, as a form of entertainment, are good at attaching emotion to problem solving, just as films are good at attaching

> emotion to stories (p. 35)

Students who have learned via narratives also may experience superior recall because story events are: contextualized and connected with more nodes within a cognitive network; and, in the cases of transportation and identification, stored as though they were actual life experiences.

Transformational games, or games that demand role-playing and agency on the part of the learner and whose trajectories are shaped by the learner's actions, can also be used in general education contexts (Barab, Gresalfi, & Ingram-Goble, 2010; Squire & Durga, in press).

> Playing transformationally involves (a) taking on the role of a protagonist (b) who must employ conceptual understandings (c) to make choices (d) that have the potential to transform (e) a problem-based fictional context and ultimately (f) the player's understanding of the content as well as of (g) herself as someone who has used academic content to address a socially significant problem. Playing transformationally integrates person, content, and context as part of a transactive system in which each type of positioning motivates and is motivated by the other types (Barab et al, p. 526).

This interactive process can be powerful and instructive, allowing one to interact with and own the material in a very personal way.

Squire and Durga (in press) explored historiographic play, a form of transformational play, in which learners play a role in simulations. Their questions and problem-solving guide the experience, which enriches the process and the take-aways.

> From a model-based learning environment perspective, learning entails more than mastering one long narrative of facts; learning is about developing the ability to ask good questions, draw inferences from the

> model, identify points in the model that can or need to be modified, and then marshal resources to refine the model. From a socially situated perspective, the goal here is not to learn "all there is to know about one true model", or even, to "develop one true model", but rather, to engage in modeling practices within a knowledge building community where knowledge is contested, constructed, and defended" (Squire & Durga, in press, p. 3)

SCT

Learning is intensely impacted by modeling. Demonstrations not only help learners to execute and memorize a series of steps, but social modeling within an environment can motivate learners to participate. Peers' success can boost one's sense of self-efficacy in a way perhaps even more profound than they had experienced vicariously via mediated characters since peers are more proximal and similar, and so boast a larger degree of social proof. Learners' sense of subjective norms, or their perception of how valued others will regard their behavior, is also influenced by peers' participation (or lack thereof). Thus, offering solid role models and creating environments rich in positive modeling are helpful in broader educational contexts.

Interpersonal Conversation

According to multiple educational theorists, learning is not an isolated endeavor, it occurs in communities of practice (Lave, 1996; Gee, 2007; Jenkins et al, 2010; Ito, in press; Soep & Chavez, 2010). Learners need to obtain feedback as they negotiate their educational journeys (McGonigal, 2011; Gee, 2008). They also need to process and reflect on their experience by storytelling with others (Gee, 2008; Squire & Durga, in press; Jenkins, 2010; Rogoff, Turkanis, & Bartlett, 2001). Through this dialogic process (the sole purpose of

knowledge communities (Craig, 1992, 1995)), learners interrogate meaning, "debug" or root out inconsistencies, formulate hypotheses, and report back to the collective for more discussion, sometimes with a mentor whose words help to guide learners' practice. Interpersonal communication surrounds learning on all sides.

Conclusion

> What we perceive becomes the basis for the interpretations and assumptions we make – the stories we tell ourselves about a given situation or organization or person. The stories become the basis of our expectations for the future, which then shape our actions and the reactions that we get… That emotional spin makes all the difference with regard to people adopting change or fighting it" (Suchman, 2010, p. 182).

Entertainment-education (EE) has experienced appreciable success in attracting audiences and contributing to changes in audience members' knowledge, attitudes, and practice. The underlying mechanisms of narrative – specifically, story structure, involvement, and components of social cognitive theory – explain entertainment-education (EE)'s effectiveness. This paper explored these three mechanisms, elucidating the nature of each and its respective facilitation of educational ends. Critiques and suggestions for future research were embedded within these explorations. Importantly, this paper also demonstrated how these mechanisms can be applied to education more generally, enriching the learning process and improving multiple outcomes across diverse domains.

And what of Arvind?

Besides trotting out stories from his collection (the parable of a thoughtful stewardess, Gandhi's wise advice to a sugar-addicted child and his parents), Arvind encouraged the group members to pair off and tell stories of their own. One older woman boldly volunteered to retell her tale to the large group. Haltingly, she narrated how a woman had shared food with her during the dark days of the Khmer Rouge, despite the fact that this woman had very little to spare; this nutritional support might have saved the storyteller's life. Recollection of the stranger's goodness and generosity publicly reduced the storyteller to tears, an uncommon phenomenon amongst contemporary Cambodians. Its effect was palpable. The group was ready to listen and learn.

And so they did…

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