

ABSTRACT

Title of Dissertation A NICE PLACE ON THE INTERNET: AN EXPLORATORY
CASE STUDY OF TEEN INFORMATION PRACTICES IN AN
ONLINE FAN COMMUNITY

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This dissertation focuses on the everyday life information practices of teens in the Nerdfighter online fan community known as Nerdfighteria. Nerdfighteria is the community of fans of vloggers John and Hank Green. This study examines aspects of everyday life information seeking (ELIS) by 1) focusing on an understudied demographic, teens between the ages of 13 to 17; 2) focusing on a fan community, Nerdfighteria, which has many members, but has been rarely studied in the academic literature; and 3) investigating everyday life information practices using a single community that utilizes multiple online platforms (i.e., Facebook, Twitter, Discord, and YouTube), rather than centering on a single platform.

This dissertation is a case study incorporating a survey of 241 teens and semi-structured interviews with 15 teens about their experiences in Nerdfighteria, followed by a month-long diary activities. The study also included observations of public communities and review of documents related to the Nerdfighter community. Data analysis was iterative and incorporated grounded theory techniques.

This study finds that teen Nerdfighters use their fan community to engage in a wide variety of everyday life information seeking around topics that are related to their personal development. Social, cognitive, emotional, and fan topics were predominant. Teen Nerdfighters engaged across platforms and were likely to switch platforms to find the optimal technical affordances while staying in Nerdfighteria. The teens viewed these changes as staying within the community rather than changing from one platform to another—illustrating the primacy of the community to the teens in meeting their information needs. Teens were drawn to Nerdfighteria because they believed it to be a unique place on the Internet, which valued intellectualism, positivity, and kindness. In many cases, teens preferred to observe other’s interactions in order to gain the information they needed or wanted, and waited to engage via posting or responding when certain criteria were met. These findings describe the complicated interplay of the ELIS topics sought, the preferred practices for meeting an information need, and the reasons for choosing one community over another.

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INFORMATION PRACTICES IN AN ONLINE FAN COMMUNITY

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DEDICATION

For Daniel, Lily, and Jack, without whom this would not be possible and without whom I would not want to finish. In thanks and gratitude for understanding and respecting this work even in light of stress, skipped dinners, travel, and so on. Thank you.

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As this dissertation focuses on a community, I have spent a great deal of time thinking about what makes a community and how it impacts an individual. It is hard to imagine that someone could complete a dissertation without the love and support of a community behind them. In this aspect, I am truly blessed with abundance. Indeed, it will be impossible to list all the people who have shown me support, help, and kindness over the years of my doctoral study. That said, there are several people who deserve recognition for their outsized role in helping me reach this milestone.

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It turns out that I cannot write alone in my basement day after day. Therefore, I must thank the staff at the Daily Dish—Zena, Jerry, and everyone else who let me borrow the Wi-Fi and a table when I needed to escape the basement.

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patience, help, dank memes, and dark chocolate (usually Neuhaus because they know me so well). These two are truly all the things a Mom could hope for. My mother, who has believed in me since the start, and by start I mean preschool. I have to thank her for literally everything.

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CHAPTER 1 INTRODUCTION

This dissertation examines the everyday life information practices of teens ages 13 to 17 in an online fan community. Teens are frequent participants in online communities and are notoriously intense fans.

Research indicates that teens use everyday life information seeking (ELIS) practices to foster their transition to adulthood (Agosto & Hughes-Hassell, 2006a, 2006b). Teens are spending more and more of their lives online. Ninety-two percent of teens are online daily, 56 percent are on several times, and 26 percent are online “almost constantly” (Lenhart, 2015, p. 3). In addition to spending a sizable percentage of their time online, teens engage online with a wide range of media for a wide range of purposes—educational, social, and informational (Lenhart, 2015; Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013). Seventy-two percent of teens belong to more than one social media platform (e.g., Facebook and Instagram) (Lenhart, 2015) and use them for a wide range of purposes. Teens frequently engage online with their favorite artists, musicians, or writers, or with communities that spring up around a work of art, television show, or book series. In popular culture, engaging with the object of your interest is known as participating in a *fandom*. For example, Mugglenet.com is a classic example of a “fandom” for fans of Harry Potter. Additionally, some research into fan communities suggest that many of these communities are heavily populated by teens (Campbell et al., 2015; Hellekson & Busse, 2006).

Despite the popularity of online fan communities among teens, the phenomenon of teens in online fan communities is understudied in academic scholarship. Furthermore, the research into fan communities and teens often focuses on the creation of fan fiction, rather

than the community (Campbell et al., 2015; Hellekson & Busse, 2006; Korobkova, 2014). Also, research into teens' online will examine their practices in a single social media platform (e.g., Facebook or Tumblr) rather than capture the movement across social media platforms.

To investigate the connection between fan communities and teens, I conducted a pilot study from January 2015 to April 2015. The study found that teens engage in a variety of ELIS practices in their online communities beyond their fandom. Furthermore, the pilot study indicated that use fan communities to research a wide range of subjects, from the mundane to the sensitive. The pilot study provided preliminary data that suggests young fans were often careful about their media selection practices. Some of the participants indicated that they switched social media depending on the need and audience. *Note:* I am using Bond's (2016) definition of a social media platform as a single social network site (ex., Facebook). Finally, several of the Nerdfighters in the pilot study indicated that they were avid users of various Nerdfighter platforms for information gathering, but that they preferred to "lurk" rather than post or respond to posts. Understanding how teens use their online fan communities to gather everyday information and foster a transition to adulthood will provide researchers and the general public, including parents, teachers, and librarians, with an opportunity to better serve this critical age group. The pilot study informed the development of research questions and goals for this dissertation.

This dissertation will provide insights into the everyday information practices of teens, contribute to scholarship on social media selection practices of teens, and expand our understanding of the range of practices teens use to meet their information needs.

BACKGROUND

This research grew out of a pilot study conducted in the spring of 2015. The pilot study examined the ELIS practices of teen members of Nerdfighteria to build understanding of how teens use their fan community to gather information and foster a transition to adulthood. Nerdfighteria is the community of fans of John Green (author) and Hank Green (science writer/musician). Individually, these fans are known as Nerdfighters. During the pilot study, seven young people, ages 13 to 22, were interviewed about their engagement in the Nerdfighter fan community. Four participants self-identified as female and three self-identified as gender fluid (see note on gender-neutral language, p. 25). This gender imbalance is a result of the strongly female fan base combined with the small sample size of the pilot study. In this pilot study, several online Nerdfighter communities were examined for their norms by reviewing their founding documents, and their rules and statements from the administrators. Additionally, the early videos from John and Hank Green were analyzed for their content and articulation of community values. Finally, public interactions on one public, online teen forum were analyzed for content and to affirm that the members were indeed young adults.

Through this pilot study, several findings became clear. First, the young, largely female fans of John and Hank Green were engaging in a variety of ELIS practices in the Nerdfighter community far beyond its ostensible focus on the works and personality of John and Hank Green. Second, the study participants intentionally chose to participate in Nerdfighteria because of the diverse and far-flung members and shared community values. Third, the teen participants were savvy users of social media and engaged across a variety of platforms and in a variety of ways, depending on their information need at that time. For example, a teen might elect to scan the comments of a science video for more details about the topic, but elect to post a question to a closed Facebook group about a medical issue. The Nerdfighter community is not on one social media platform exclusively. Instead, the teens participated on multiple platforms, such as

Facebook, iMessenger, and Tumblr, often simultaneously, and switched platforms for reasons including seeking information, privacy, or anonymity. Finally, the teens often engaged in passive information seeking via “lurking” on forums that addressed their interests, rather than engaging in direct questioning; this means that their digital traces are very difficult to analyze. Given the small size of the pilot study, and the demographics (all participants identified as female or gender fluid), these findings were preliminary. Furthermore, research on teen social media selection practices and engagement is still emergent. This research will contribute to understanding why teens turn to specific communities, when and why they switch social media sites, and the information engagement patterns of teens.

PROBLEM STATEMENT

The intersection of everyday life information practices with youth information behavior and online fan communities is understudied in the academic literature. Nonetheless, we know that teens live much of their lives in online settings, using social media to gather information from a wide range of personal and other sources (Lenhart, 2015; Madden et al., 2013) and often participate in fan communities (H. Green, 2015b; Kligler-Vilenchik, 2016; Korobkova, 2014; Masanet & Buckingham, 2015). Existing research around teens online often focuses on a single platform such as Facebook (Asghar, 2015; Bond, 2016; Hillman et al., 2014a, 2014b; Marwick, 2005; Vraga et al., 2015), rather than exploring the reality of online engagement today, which is multimodal and fast changing (Lenhart, 2015). This study proposes to address these gaps by examining the intersection of everyday information practices with teens in a fan community, while recognizing the movement between platforms within a single community. Finally, as a researcher and educator working with teens, it is important to hear and understand the voices and

choices of teens in order to examine how they address their everyday life information needs and capture the realities of their lived experiences online and in real life.

OBJECTIVES AND RESEARCH QUESTIONS

The objective of this research is to investigate the everyday life information practices of teens between the ages of 13 and 17 in one online fan community. There are three main goals for this research. First, this dissertation will describe the everyday life information practices of teen Nerdfighters. Second, this study will describe the teens' engagement patterns across social media platforms and their rationales for choosing and switching platforms. Third, this study will describe the engagement patterns and practices of teens, from lurking to sharing. This study explores how teen fans use their community for information needs beyond simply fostering their fandom and illuminate the selection processes that drive different forms of engagement in online communities.

This research seeks to answer the following research questions:

- What types of everyday life information do teens seek in the Nerdfighter online fan community?
- What methods do teens in the Nerdfighter online fan community use to answer everyday information needs?
- Why do teens choose to obtain everyday information via the Nerdfighter online community rather than another community or another information source?

SCOPE OF STUDY

This dissertation is a case study of the information practices of teens in the Nerdfighter community. The data collection for this study took place between January and August of 2017. Data was comprised of a survey to capture demographics and initial perspectives, interviews with 15 teen Nerdfighters, a month-long, prompted diary completed to some extent by all interviewees, and follow-up interviews with 12 of the 15 interview participants. In addition to the survey, interview, and diary data, this research also observed three public Nerdfighter online platforms and examined documents related to the formation, management of, and participation in the Nerdfighter platforms.

SIGNIFICANCE OF STUDY

The main contribution of this research is in the areas of teens in online fan communities, their information practices therein, and their navigation between and through social media platforms housing these communities. While other researchers have examined pieces of these areas, they have not been put together as a whole.

This study makes clear that teens' information practices in a fan community can contribute to their maturation process. By examining the framework developed by Agosto and Hughes-Hassell (2006b) for urban teens using a different setting, online communities, this study provides insight into the ELIS practices of teens. Additionally, this study provides insight into how teens engage on different platforms and their navigation through and between various platforms to meet various needs. Finally, this study illuminates why teens turn to one community vs. another community or resource when faced with an information need.

This study has practical implications for parents and educators who seek to teach teens about information practices and for admins who wish to foster engagement by sharing best practices for healthy communities that are welcoming to teens.

EXPLANATION OF KEY TERMS

INFORMATION BEHAVIOR AND INFORMATION SEEKING

Information behavior broadly, and information seeking more specifically, are domains of information studies that address the wide range of ways people meet their information needs. *Information behavior* is a broad category that encompasses all the ways people interact with information—active and passive information seeking, as well as information use (Wilson, 2000). Wilson’s (2000) view of information seeking is narrower. *Information seeking* is purposeful and answers a need. In the context of this study, both information seeking and information behavior will be discussed. These concepts are outlined in greater detail in Chapter 2.

EVERYDAY LIFE INFORMATION SEEKING

Everyday life information seeking (ELIS) is defined as the kind of information people need for their daily life and is distinct from information seeking for work or school. ELIS examples include:

- Is a favorite television show available for streaming?
- Will it rain over the weekend?
- Are the symptoms I am having part of the common cold or something more ominous?

This information seeking can be an active search for information through the Internet, asking another person, or reading a print information source. ELIS can also be passive, as in listening to the radio during a commute and catching that day's weather report. ELIS research draws heavily on the work of Reijo Savolainen, and it is based on the information seeking practices and strategies of people who are not engaged in their occupation (1995). Since Savolainen, ELIS has been examined from numerous angles, including both purposeful information seeking (Dervin, 1998) and serendipitous information finding (McKenzie, 2003; Williamson, 1998).

ELIS can range from active searching to actively scanning information to passive absorption, with occasional help from an intermediary (McKenzie, 2003). ELIS literature will be discussed in greater detail in Chapter Two.

TEEN VS. YOUNG ADULT

Teen generally refers to the age from 13-19, and young adult can be defined in a myriad of ways. *The Journal of Research on Libraries and Young Adults* prefers the term teen for those between the ages of 13-18, consequently that is the term that will be used in this dissertation. As developmental scholars such as Eric Erikson (1968) note, there are tremendous developmental changes in adolescence, defined as the period between childhood and adult responsibilities and typically occurring between the ages of 13 and 18. At the early end of adolescence, an individual is beginning to wrestle with questions of identity; Erikson theorizes that a stable identity is the hallmark of the successful conclusion of adolescence (1968). The youngest age for this study is set at 13, because that is typically considered to be the beginning of the teen years and is the minimum

legal age for an individual to establish a social media account under the terms of service for most social media. The top range is set at 17 to capture the upper end of high school students before they reach the legal age of majority. In this study, participants are spread across this age range.

NERDFIGHTER

According to founders John and Hank Green (Green & Green, 2009) a *Nerdfighter* is self-proclaimed, “made of awesome,” and anyone who says they are a member of the group. However, Nerdfighter is also a term for fans of the Green brothers who are often members of various online communities, some of which meet up in real life. There is no accurate, measured number of Nerdfighters. However, given that there are over three million subscribers to the Green’s YouTube channel alone as of December 2017, it is safe to say Nerdfighters may number in the millions. According to the Nerdfighter censuses, all of which had over 100,000 respondents, the community is disproportionately young and female (H. Green, 2013, 2014, 2015b).

ONLINE FAN COMMUNITY

Online communities have been defined a variety of ways in the research literature.

However, for the purposes of this dissertation, the following definition from Preece will be used: “any virtual social space where people come together to get and give information or support, to learn, or to find company. The community can be local, national, international, small or large” (2001, p. 350). This dissertation is focused on an online fan community specifically. An online fan community shares the general characteristics of an online community, with the addition that participants share a

passion for a specific thing—whether an artist, artwork, or celebrity. As Jenkins (2007) notes, the proliferation on online communities has widely expanded access to fan communities from its traditional roots in science fiction to encompass virtually anything people are passionate about. This research focuses on one community in particular—Nerdfighteria—defined above.

LURKER / OBSERVER

The commonly used term for someone who is a member or viewer of a community without posting or responding to a post is *lurker* (Amichai-Hamburger et al., 2016; Preece, Nonnecke, & Andrews, 2004; Rau, Gao, & Ding, 2008). Lurkers will read others' posts, but rarely if ever post themselves. When a question is posed, lurkers may read the answers, but are disinclined to respond themselves. Lurkers may search threads or feeds for specific information, but they do not ask for information directly, nor are they likely to respond to another's request for help. Often, lurking is considered a problem to solve, rather than a natural state on a continuum of engagement. Given the negative connotations of the word *lurker*, the word *observer* will be used whenever possible. For the purposes of this study, an observer is someone who is a member or viewer of a community without posting or responding to a post within the last month.

GENDER NEUTRAL LANGUAGE

For the purposes of this dissertation, gender-neutral language, including the singular *they* pronoun, will be employed as much as possible. The American Association of Psychologists style calls for bias-free language and supports the right of subjects to self-identify their pronouns (Lee, 2015). One finding from the survey indicated that almost

20 percent of respondents selected a non-binary gender (i.e., neither male nor female). All interview participants were asked for a preferred pronoun. The replies were mixed, and some did not reply at all. Therefore, out of respect for the participants' self-identification, a singular *they* pronoun will be used for individuals who requested it and for those who did not reply with a preference.

STRUCTURE OF DISSERTATION

This dissertation is presented in six chapters. Following this introduction, Chapter 2 examines the literature on everyday life information practices, youth information behavior, online communities, and fandoms, focusing on youth as much as possible. Chapter 3 will describe the study methodology in detail, including a discussion of the demographics of study participants. Chapter 4 will present the data that emerged and describe its connection to the research questions. Chapter 5 discusses the findings and its potential ramifications. Chapter 6 will summarize the dissertation, outline limitations to the study, and provide directions for future research.

CHAPTER 2 LITERATURE REVIEW

This literature review will synthesize multiple strands of scholarship and tie those strands back to the research questions described in Chapter 1. The focus of this dissertation is on youth information practices, but for contextual purposes literature on online communities and fandoms will also be discussed. First, this review begins with a high-level overview of information behavior, which will progressively narrow to address everyday information practices and youth information behavior. Next, this review presents scholarship on online communities, the role of lurkers, fandoms, and Nerdfighters online. Finally, the review will identify gaps in scholarship that this dissertation aims to address and describe the conceptual framework that orients this study and forms the basis for the findings presented in Chapter 4.

INFORMATION BEHAVIOR

The relevant theoretical frameworks toward information behavior share a user orientation, a subjective, constructivist mindset, as well as an orientation toward contextualizing information behavior in the world of the user. This literature review does not weigh in on the recent ontological debate over the definition of “information” itself; instead an expansive stance toward the definition of information is taken. This subsection will initially focus on information behavior broadly but will then narrow to look at everyday information practices, and youth information seeking more specifically.

The concept of information behavior is broad and universal, but with subtle differences between scholars. Wilson (2000) defines information behavior as “the

totality of human behavior in relation to sources and channels of information, including both active and passive information seeking, and information use" (p. 49). Thus, Wilson's definition includes face-to-face communication with others, as well as the passive reception of information "without any intention to act on the information given" (Wilson, 2000, 49). While Wilson's definition is a reasonable start to define information behavior, it is so broad as to include almost any time humans brush up against information in almost any form. Todd (2003) is slightly more specific but still all encompassing:

Simply defined, human information behavior is the study of the interactions between people, the various forms of data, information, knowledge, and wisdom that fall under the rubric of information, and the diverse contexts in which they interact. Typically, the field of human information behavior addresses concepts such as people's information contexts, information needs, information seeking behaviors, patterns of information access, retrieval and dissemination, human information processing, and information use. Related concepts include sources, uncertainty, and satisfaction. Its theory building, research, and development are based on the belief that information is essential to the functioning and interaction of individuals, social groups, organizations, and societies, and to the ongoing improvement of the quality of life (Todd, 2003 p. 27).

Information behavior is deceptively complex and, as noted above, has many components, including information seeking, gathering, organization, and use (Spink & Cole, 2006). Understanding the complexities and iterative nature of information behavior is greatly enhanced with the use of a model. Wilson attempted to integrate

numerous aspects of information behavior and proposed a “general model” reproduced in Figure 2.1.

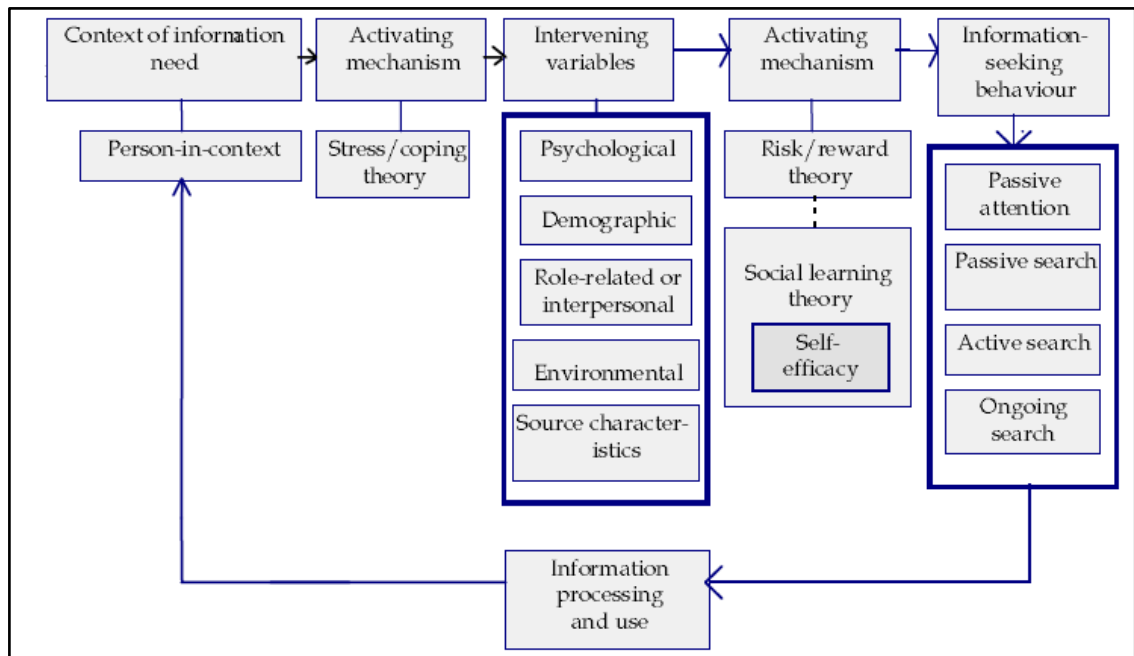


Figure 2.1. Wilson’s 1996 model of information behavior (Wilson, 2000, p. 53.).

Wilson’s model is useful in that it focuses on the user and their information need, recognizes that information behavior can be iterative, and incorporates the user’s personal affect into the model (Wilson, 1997). Wilson and many other scholars recognize that information behavior is frequently not linear, as users refine and change their information seeking in light of the user’s context (Dervin, 1998; Kuhlthau, 1991; Wilson, 1997). Wilson’s (1997) model also incorporates the range of information seeking behaviors (passive attention, passive search, active search, and ongoing search) that are relevant to this research, as the pilot study indicated that teen Nerdfighters engaged in a full range of information seeking.

INFORMATION SEEKING

Information seeking has been examined from various angles over the history of the discipline. Traditionally, information seeking is framed as beginning with the realization of a gap in knowledge, even though the ability to form a clear question is often absent (Oddy, Belkin, & Brooks, 1982). The individual may simply sense that something is off and there is a need to be filled. After reflection or with serendipity, they may realize that there was a missing piece of information needed. However, what might appear to be a simple request is now understood to be underpinned with a diverse set of needs, contexts, assumptions, and understandings (Dervin, 1998; Todd, 2003). Each stage of information gathering and research is understood to carry cognitive burdens and emotional/affective impacts (Dervin, 1998; Kuhlthau, 1991; Oddy et al., 1982; Wilson, 1997, 2000). In other words, how a person feels about their information need will greatly impact the strategies they use and the ability they have to fulfill that information need.

Kuhlthau's examination of this process is seminal. As people move through the process of identifying a need, focusing on a topic, exploring that topic, formulating clearer questions, and ultimately answering their need, the person experiences highs and lows of emotional, affective states, which include optimism, frustration, confusion, confidence, and ultimately either satisfaction or disappointment (Kuhlthau, 1991). This process is not linear, and can cycle between stages repeatedly before reaching a resolution of satisfaction or disappointment (Kuhlthau, 1991). Figure 2.2 illustrates the stages identified by Kuhlthau, the associated actions, and the typical affect of the user (i.e., their emotional state). As useful as Kuhlthau's contributions are, her studies often

focus on formal search settings, typically college and high school students attempting to answer an information need driven by a school assignment.

Stages in ISP	Feelings Common to Each Stage	Thoughts Common to Each Stage	Actions Common to Each Stage	Appropriate Task According to Kuhlthau Model
1. Initiation	Uncertainty	General/Vague	Seeking Background Information	Recognize
2. Selection	Optimism			Identify
3. Exploration	Confusion/ Frustration/ Doubt		Seeking Relevant Information	Investigate
4. Formulation	Clarity	Narrowed / Clearer		Formulate
5. Collection	Sense of Direction / Confidence	Increased Interest	Seeking Relevant or Focused Information	Gather
6. Presentation	Relief / Satisfaction or Disappointment	Clearer or Focused		Complete

Figure 2.2. Information search process (ISP) (Kuhlthau, 1991, p. 367).

Unlike Oddy, Belkin and Brooks' (1982) assertion that people often do not recognize an information need, Dervin (1998) conceptualizes information seeking specifically as recognizing a gap in one's understanding of the world, which the person then tries to fill. The resulting process of sensing a knowledge gap, attempting to bridge

the gap, and ultimately coming to resolution is frequently called *sense making* in information studies. First theorized by Dervin, sense making as a theory attempts to take knowledge from a noun to a verb (Dervin, 1998, 2010). Sense making takes a constructivist view of information seeking and human behavior. Each person is actively building their understanding of the world with a unique perspective and context; there is no single reality of knowledge (Dervin, 1998). “Humans, sense making assumes, live in a world of gaps: a reality that changes across time and space and is at least in part ‘gappy’ at a given time-space; a human society filled with difference manifested in madness, culture, personality, inventiveness, tentativeness and capriciousness; a self that is sometimes centered, sometimes muddled, and always becoming,” (Dervin, 1998, p. 33). Figure 2.3 below summarizes sense making.

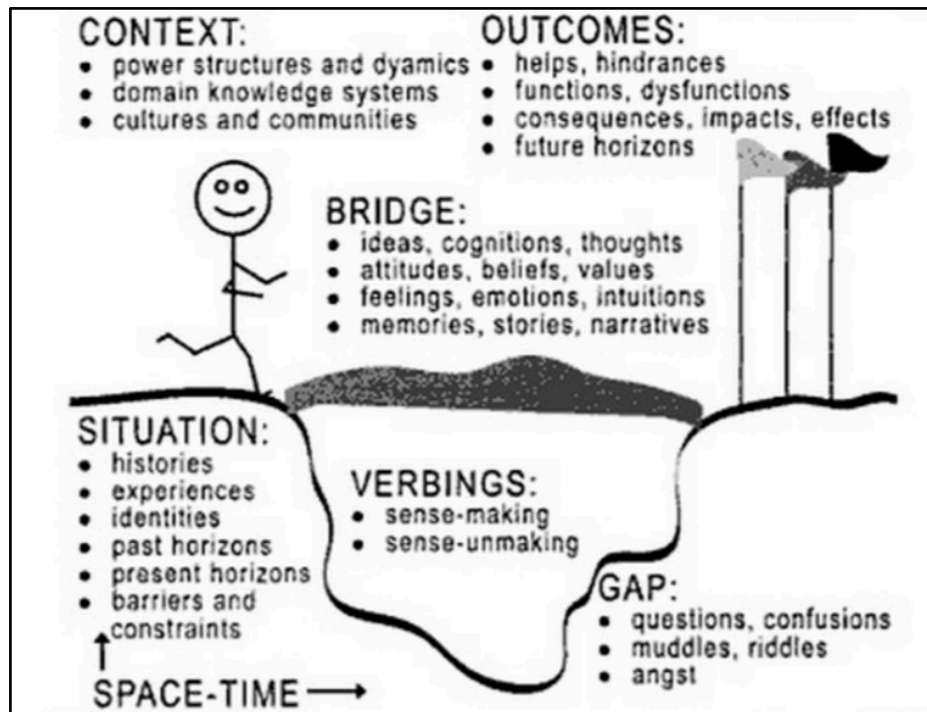


Figure 2.3. Dervin’s model of Sense-Making’s central metaphor (Dervin, 2010, n.p.).

While scholars focus on different aspects of information seeking, their broad outlines remain similar. An individual is in some way is dissatisfied with their current state, though they may not have a clear understanding of what is needed. They recognize that information might help them navigate to a different state and, therefore, engage in information seeking to try to resolve this conundrum. Often the person's emotional or affective state becomes involved—they might be anxious about their situation, eager to find a resolution, frustrated with the difficulty finding information, etc. The process from information need to information resolution is not always linear, nor is it always resolved positively.

EVERYDAY LIFE INFORMATION SEEKING

Throughout our daily lives, we gather information in a variety of ways and for a variety of purposes. Early research, especially that on children and teens, examined information seeking in an academic or otherwise structured setting. However, all people, even minors, need daily information beyond their work or school assignments. Many aspects of our lives require answers to information needs that are far less formal than in a work or school setting. These questions range from the minor to the serious and life changing. What time does the bus come? Where should we go on vacation? Which medication should I take for my allergies? Should I go to college? Where should I go to college?

Often these needs are not even framed as questions, but rather musings, curiosity, or wonderment about the world. Everyday life information seeking (ELIS) is a theory that examines and explains how people gather information outside of work and

school. It encompasses the purposive search for information as well as the passive absorption of information.

Reijo Savolainen's research into the ELIS of people in Finland is one of the most cited examples of ELIS scholarship. Savolainen examined the information practices of adults when they were not engaged in their occupation. He used the orienting framework of "way of life" and "mastery of life" to describe his central tenants (R. Savolainen, 1995). Way of life describes how a person functions under normal circumstances. Examples include daily activities such as hobbies, habits, or entertainments. Mastery of life constitutes the tasks, one does to maintain their way of life, with an additional focus on how one handles problems. Savolainen refers to this as "keeping things in order" (R. Savolainen, 1995). The intersection of way of life and mastery of life with a person's values, phase of life, and capital (social, material, and cognitive) affects their ability and strategies for negotiating everyday life information problems (Savolainen, 1995). Savolainen's model is reproduced in Figure 2.4, below.

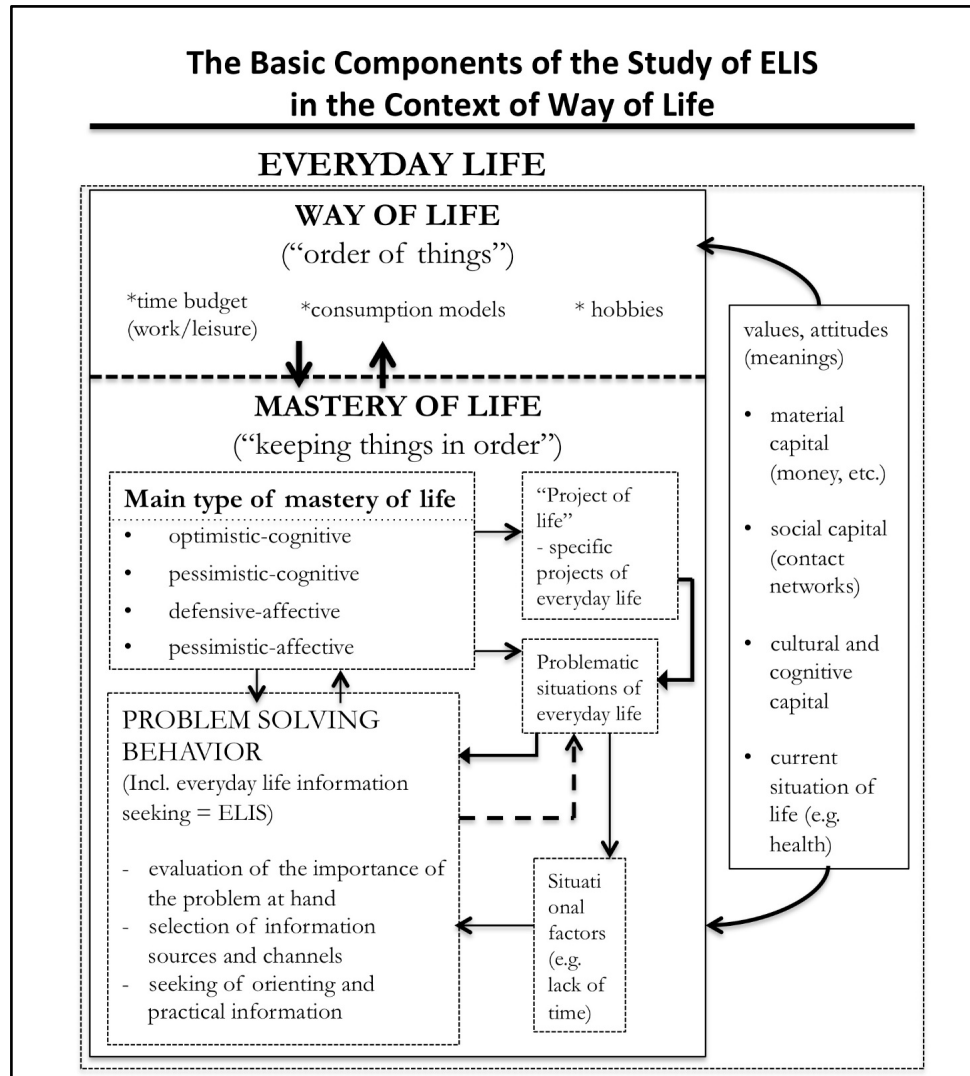


Figure 2.4. The basic components of the study of ELIS (Savolainen, 1995, p. 268).

While ELIS has a great deal to tell us about how people engage with information, it can be critiqued as being overly broad. Is there anything that happens outside of work and school that does not qualify as ELIS? Nonetheless, this attention to the lived experience of people with information, rather than a narrowly, task-focused view of information interaction, is needed. This dissertation contributes to ELIS by examining both an understudied population, teens, and an understudied venue for information seeking, an online fan community.

EVERYDAY INFORMATION PRACTICES

Over time it became clear that information seeking, while an important and necessary component of information behavior, was more narrowly framed than the actual lived experience of most people. Information seeking described a piece of an interaction with information, but only represents a slice of a person's engagement. In reality, people engage with information in a variety of ways, sometimes directive, as most seeking models describe, sometimes passive, and sometimes sharing the information they have (Savolainen, 2008).

Savolainen (2008) expanded his model, illustrated in Figure 2.5, to encompass this wider context of everyday practices by incorporating information seeking, use, and sharing in the context of daily life, while recognizing the contextual factors that impact practice. Seeking describes the ways a person identifies and accesses sources of information. Use incorporates evaluation, filtering, and wielding of information. Sharing incorporates the giving and receiving of information. These practices are impacted by a variety of contextual factors, including the person's knowledge and understanding of the social rules and norms around information, the degree of urgency and time a person has to devote to a task, the type of project requiring information, and the person's values, goals, and interests. Thus, Savolainen developed a new model that reflects the information practice construct and, while appearing to be linear, reminds us that information practices in reality are often cyclical, iterative, and nonlinear.

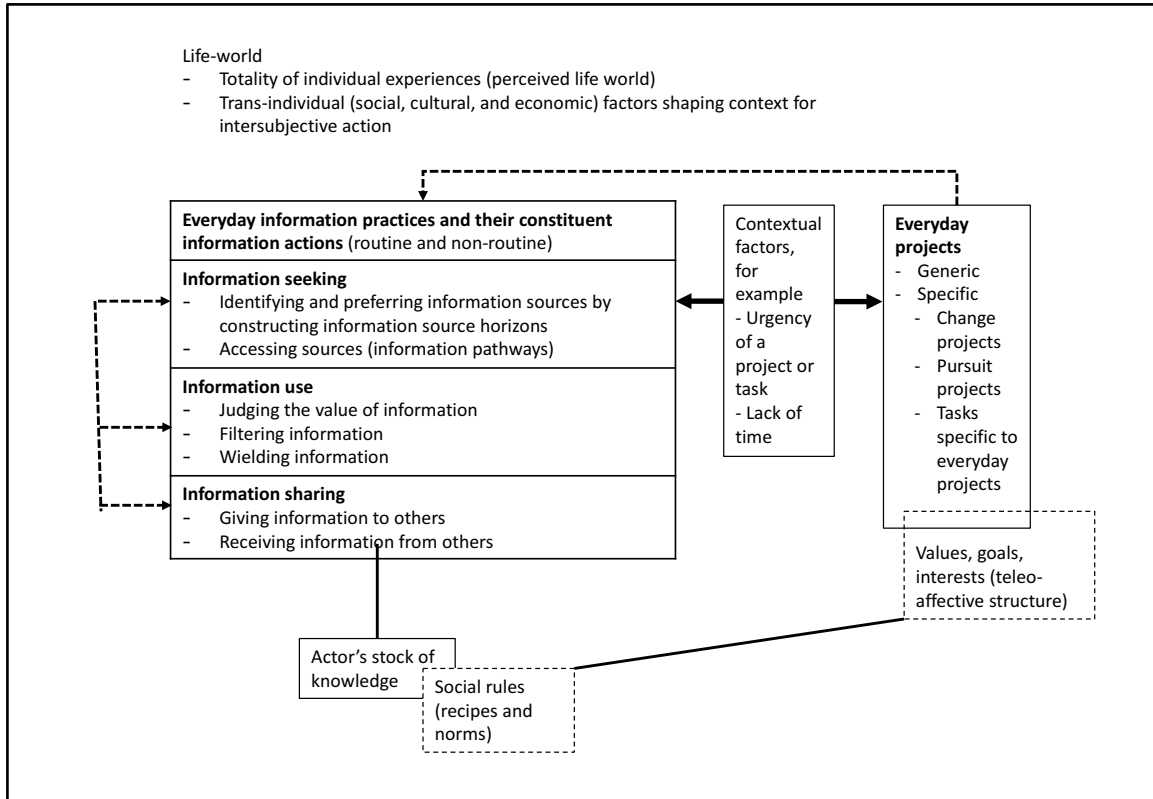


Figure 2.5. Model of everyday information practices (Savolainen, 2008, p. 65).

Savolainen (2008) suggests that the information environment a person uses, defined as their preferred sources of information, changes slowly. “Because the perceived information environment indicates a general picture of the sources available in the everyday world, it changes quite slowly” (Reijo Savolainen, 2008, p. 61).

ELIS has since been examined from numerous perspectives, cultures, and ages of participants, and from the perspective of both intentional information seeking (Dervin, 1998) and serendipitous information finding (McKenzie, 2003; Williamson, 1998). Occasionally, information seeking involves the use of an intermediary such as a friend (McKenzie, 2003). McKenzie (2003), in her study of information seeking among women pregnant with twins, describes a range of information seeking from active seeking

(directed searching), active scanning (reviewing the information environment for relevant information), non-directed monitoring (keeping an eye out), and by proxy (asking another person to refer to an information source). McKenzie (2003) notes that there is often fluid movement between the modes of information seeking. After reviewing her findings, McKenzie (2003) created a two-dimensional model of information practices as described by her participants that included the range of information seeking modes described above, with the addition of two modes—connecting and interacting (see Figure 2.6). Connecting refers to the identification of information sources, whereas interacting involves actual contact with the information source (McKenzie, 2003). This new model diverges from information seeking and becomes information practice by including categories that refer to both information intermediaries and serendipitous information encounters.

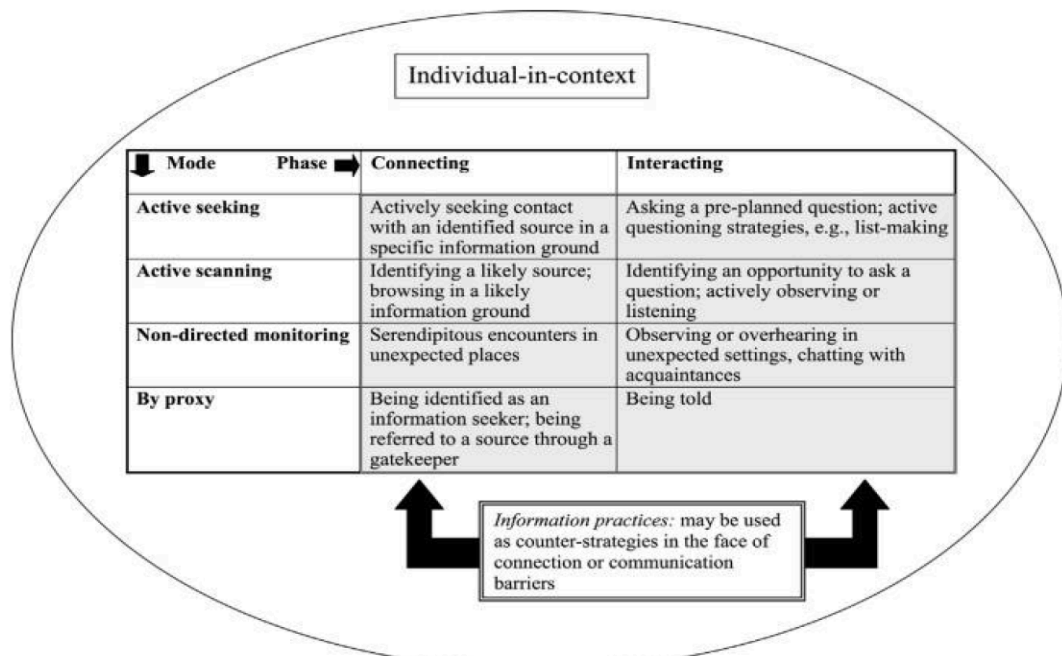


Figure 2.6. Two-dimensional model of information practices (McKenzie, 2003, p. 26).

This two-dimensional model privileges direct, live interaction with other people, in a way that is not reflective of current engagement with Internet communications technology. Nonetheless, it provides a useful framework for examining interactions. Additionally, McKenzie (2003) was examining adult women, rather than teens. This distinction may impact how information practices are enacted. However, the framework of modes of searching, in combination with phases of connection, is a powerful one for examining information interaction. This dissertation will expand on these findings by examining McKenzie's information practice model in a setting that does not involve direct, live interaction with people and from the perspective of the information seeker and the provider. Additionally, McKenzie's model, while powerful, was focused around a specific information need and used that need to develop a lens for examining the information practices. This dissertation will examine a group, rather than a need, and explore how teen Nerdfighters address information needs, regardless of the topic.

ELIS researchers frequently seek to classify how people meet their everyday information needs and observe or interview people across a wide range of settings including public libraries, medical offices, and homes (Agosto & Hughes-Hassell, 2006a, 2006b; McKenzie, 2003; Meyers, Fisher, & Marcoux, 2009; R. Savolainen, 1995; Williamson, 1998). This dissertation will contribute to the understanding of everyday information practices by exploring the way teens engage with everyday life information within online communities, an area that is not adequately captured by current research.

YOUTH INFORMATION PRACTICES

Youth information practices are currently understudied, especially in light of the complex nature of teens' developmental stages in conjunction with the rapid evolution of information sources. Adolescence is a critical period of development, which should culminate in the successful transition to adult responsibilities (Erikson, 1968). Today's teens are simultaneously experiencing this developmental transition and an explosion of information technology. These two factors argue for a close examination of youth information practices

Subrahmanyam and Šmahel (2011) assert that we can gain an understanding of teens' lives that "will endure even if the application itself does not" (p. 33), if researchers take the time to examine the complexity of youth information interactions in light of their online presence and their developmental stage and associated tasks. In contrast to media effects theory and uses and gratifications theory, which posits that the user is more a passive consumer of media, Subrahmanyam and Šmahel (2011) take the stance that teens are co-creators of an ever-evolving online environment. As such, they argue, teens are enacting the same developmental struggles for independence, intimacy, identity, and sexuality in their online and offline lives (Subrahmanyam & Greenfield, 2008; Subrahmanyam & Šmahel, 2011). Teens use their online communities in similar ways to their offline lives to explore developmental needs such as pairing off, or expressing identity (Subrahmanyam & Greenfield, 2008; Subrahmanyam, Greenfield, & Tynes, 2004; Subrahmanyam & Šmahel, 2011). What these prior studies fail to address, however, is the connection between the information sought or exchanged and

the specific developmental needs teens. This study will address this gap by examining the kinds of information teens are exchanging in an online setting and tying those information needs to their developmental tasks.

Teen ELIS practices have been explored by Agosto and Hughes-Hassell (2006a, 2006b) in their examination of urban teens’ ELIS needs. Agosto and Hughes-Hassell examined the everyday life information needs of urban teens in a public library and a youth center using a mix of survey, audio and written journals, and group interviews (Agosto & Hughes-Hassell, 2006a) and extrapolated the responses using developmental framework first proposed by Havinghurst (as cited by Agosto & Hughes-Hassell, 2006a, 2006b), and also used by Subrahmanyam and Šmahel (2011). As a result of this examination, the researchers found that the teens in their study engaged in ELIS practices to accomplish maturation tasks termed “selves” (Agosto & Hughes-Hassell, 2006b). These selves and their definitions are outlined in Figure 2.7, below.

Emotional	Family relationships, emotional health, religious practice
Reflective	Self-image, philosophical concerns, heritage/cultural identity, civic duty, college, career, self-actualization
Physical	Daily life routine, physical safety, goods and services, personal finances, health, job responsibilities
Creative	Creative performance, creative production
Cognitive	Academics, school culture, current events
Sexual	Sexual safety, sexual identity
Social	Friend/peer/romantic relationships, social activities, popular culture, fashion, social/legal norms

Figure 2.7. Maturation tasks and definition of selves (Agosto & Hughes-Hassell, 2006b).

Finally, Agosto and Hughes-Hassell (2006b) found that the ELIS needs of urban teens are quite similar to the ELIS needs of teens in the general population. This study will contribute to the discussion of the ELIS needs of teens by examining a previously unexplored setting—an online fan community.

As teens progress from childhood into independent adulthood, ELIS topics proliferate. Their lives become more complex, and they become more independent from their parents and teachers. Additionally, teens live in a digital world; 92 percent of teens ages 13-17 are online daily, and 80 percent are online between “several times a day” and “almost constantly” (Lenhart, 2015). It is logical, therefore, that teens engage in ELIS practices through their online media. Additionally, current research gives some insight into the factors that impact teen technology use. Magee, Agosto, and Forte (2017) asked teens to “describe a recent experience looking for information about a personal interest and to discuss their social media use” (p. 514) and found four factors: local policies and access, affective factors, life stage and future goals, and relationships. One interesting finding from Magee, Agosto, and Forte’s (2017) research was that teens were actively and intentionally making choices about when and how to use technology, including the decision to curtail or stop. This study was focused on technology broadly, however; when and why teens turn to specific online settings has not been sufficiently explored. This study will address this gap by examining the methods teens use to answer their information needs, including when and why they select a specific information source and how they engage across platforms.

There is relatively little research into youth information behavior in online fan communities. One exception, however, is Masanet and Buckingham's (2015) examination of peer-to-peer sexual education on fan forums for a television show in the United Kingdom. The show, *Skins*, was explicitly transmedia designed to include both the television show and online components, including forums and other venues, into an experience of the content (Masanet & Buckingham, 2015). The authors found that the forums provided a context for teens to safely talk about real life via the advice on life section of the fan forums, and that the forums were generally supportive rather than judgmental or abusive (Masanet & Buckingham, 2015). Another exception is Price and Robinson's (2016) Delphi study of information behavior by adults in fan communities, in which they found that "much of the information behaviour of fans is generally collaborative, informal and generous. As one participant commented: 'being in fandom means being in a knowledge space'; and as another noted: 'fandom is a huge information hub just by existing'" (Price & Robinson, 2016, p. 12). Price and Robinson (2016) also found that fans created lasting and meaningful relationships with each other, and that the line between online and offline interactions is increasingly indistinct. This study will add to our understanding of the role of a fan community in the information behavior of teens by probing the information needs, methods, and reasons teens turn to Nerdfighteria.

LURKING

Information gathering online lends itself to passive information seeking, commonly known as lurking. While ELIS theory does acknowledge the role of passive

information gathering, it has not kept pace with the digital practice of lurking, or gathering information through observing online interactions. Teens, for example, might follow a Tumblr on a topic of interest but never directly engage in questioning or direct searching. Nonetheless, every time they scroll through Tumblr, they are engaging in ELIS. Furthermore, current research suggests a continuum of online engagement, rather than a binary “on” or “off” approach (Magee et al., 2017).

Research into lurking is relatively limited, and research into teen lurkers is scarce. However, the research into lurking as a habit shows that lurkers are also interested in gathering information, but choose to observe the community rather than make a direct contribution (Preece, 2001; Preece et al., 2004). Later research supports the finding that lurkers are engaged with their online community, but are currently observers rather than posters (Asghar, 2015; Rau, Gao, & Ding, 2008). Brandtzæg (2010) conducted a meta-analysis of media-usage typologies. He reviewed 22 studies of primarily adults that attempted to define types of media usage and found that researchers defined lurking in varying ways. The common thread throughout the meta-analysis was that while many people chose to observe, there was no common definition of how long someone needed to observe in order to be considered a lurker (Brandtzæg, 2010).

Lurking rates vary based on the community, and lurkers are often attempting to understand the community and their fit into it before posting anything (Preece et al., 2004). Brandtzæg’s (2010) meta-analysis reference above found lurking rates ranging

from 27 percent to 90 percent depending on the study and the definition of lurking and views lurking to be a way of killing time, rather than an aspect of information behavior (pp. 945-948). Lurking is often viewed as a problem to solve or as antithetical to being part of a community (Brandtzæg, 2010) Some research on adult lurkers suggests a typology of lurking that includes aspects of the individual, the social mechanisms of the group, and the qualities of the technology itself (Amichai-Hamburger et al., 2016).

Figure 2.8 illustrates the determinants of lurker behavior, which can be interrelated.

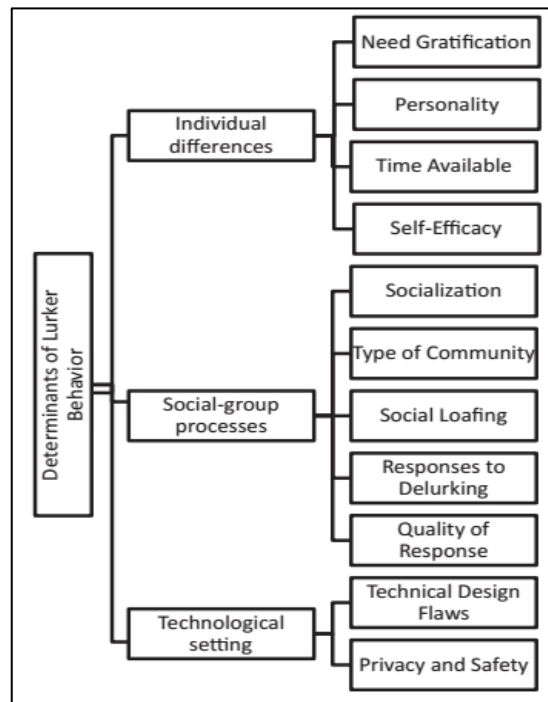


Figure 2.8. Determinants of lurker behavior (Amichai-Hamburger et al., 2016, p. 270).

An overarching theme of the typology is that the quality of the community in terms of the degree of supportiveness and positivity has a major impact on lurker behavior. This quality of supportiveness is at play in seven of the eleven sub-types:

- Self-Efficacy: the more someone believes themselves capable in online communities, the more likely they are to participate.
- Socialization: as a group member understands the norms of a community and their place within the community, they are more likely to delurk.
- Type of Community: the nature of the community has an influence on the level of participation—social networks and support communities have higher rates of ongoing participation than other types of communities.
- Responses to Delurking: lurkers observe how others are treated when they delurk and use that information to decide when and whether to delurk themselves.
- Quality of Response: participants who receive positive and useful responses are more likely to continue to participate overtly; negative and/or useless responses lead to further lurking.
- Privacy and Safety: participants who are sensitive to privacy and safety issues are less likely to participate overtly in communities they perceive as being open or unsecured (Amichai-Hamburger et al., 2016).

Responses from the pilot study provide preliminary support this finding—those participants who did post reported that the ethos of the Nerdfighter community was one of their primary reasons for taking their information need to the Nerdfighter community, rather than somewhere else. This study will examine the information engagement practices of teens in Nerdfighteria to bring greater clarity to our understanding of when and why teens choose to observe vs. engage. Additionally, this

study will examine teen information behavior across the continuum of engagement, with the aim of understanding why teens choose a strategy for information behavior.

TEENS IN ONLINE COMMUNITIES

Online communities are almost as old as the Internet itself, and people have used them to learn, play, and explore. Most research around online communities and teens has focused on issues of identity, friendship, privacy, and learning opportunities, leaving information seeking infrequently explored. Research into teens online often falls into camps that favor the positive potential of the Internet, such as distributed learning, building relationships, or content creation (boyd, 2014, n.d.; Ito et al., 2010; Jenkins, 2006), or that emphasize the pitfalls, such as cyber bullying, loss of privacy, or exposure to inappropriate adult content (boyd & Hargittai, 2013; Leung & Lee, 2012; Livingstone, 2008; Livingstone & Brake, 2010; Rideout, Foehr, & Roberts, 2010; Williams & Merten, 2011; Yardi & Bruckman, 2011). Teens in the pilot study moved fluidly between platforms, but most prior research on teens online focuses on a single platform, such as Twitter (Asghar, 2015; Bond, 2016; Hillman et al., 2014a, 2014b; Marwick, 2005; Vraga et al., 2015).

Through this dissertation, I hope to add nuance to this discussion. The pilot study revealed that the teen participants were engaged positively and productively online, had seen the pitfalls of social media, and were making a conscious choice of a community that was supportive of their growth. Furthermore, several of the teen participants made thoughtful choices in their communication strategies to reach a range of people, protect their or another's privacy, or leverage the unique affordances of a

specific community. This preliminary finding is congruent with findings from Agosto, Abbas, and Naughton (2012), that teens make careful choices regarding their Internet communication technology (ICT). In their examination of the ICT selection practices, Agosto, Abbas, and Naughton (2012) found that teens included a variety of factors into their selection, including relationships, the information to be exchanged, social dynamics, qualities of the ICT, and a sense of self-protection. These factors were then weighed against the formality and urgency of the message before the teen made a choice of ICT (Agosto et al., 2012). This research study will extend Agosto, Abbas, and Naughton's (2012) research by examining the information choices of teens within a community to ascertain the factors that influence their strategies for engaging or observing in Nerdfighteria.

Affinity spaces and participatory culture are two related concepts that frequently come up in the more positive perspective on online communities. An *affinity space* is generally defined as a place where people come together around a particular interest or project rather than geographic proximity, like character traits or shared home culture (Barton & Trusting, 2005; Gee, 2000; Hudson, Duncan, & Reeve, 2016). Typically, an affinity space is defined as a group that shares a common project or goal, integrates and welcomes new participants, develops its own slang, is reflective and changeable, encourages knowledge dispersion, and offers many ways to participate and achieve leadership (Barton & Trusting, 2005, p. 226-228). The key to an affinity space is that it is driven by a shared passion and the collective intelligence of its participants. The affinity space is fluid, and to quote Gee, "squishy" (Hudson et al., 2016). Nerdfighteria fits many

of these criteria, from its emphasis on insider slang such as DFTBA (don't forget to be awesome) to its widespread boards, Tumblrs, subreddits, and forums primarily moderated and run by fans. At times, affinity space research will focus on a single "portal." Other times, affinity space research can examine multiple portals, leading to a richer examination of "the culture, practices and discourses of the affinity space" (Lammers, Curwood, & Magnifico, 2012, p. 51).

Participatory culture is a related concept most frequently used in relation to informal learning. Because ELIS can be viewed as a form of informal learning, it is a relevant concept to the research. *Participatory culture* is defined as one in which there are low barriers to entry (i.e., anyone can join), there is strong support for participation and especially for sharing creative content, and members are mentored, albeit informally (Jenkins, 2006). Participatory culture emphasizes peer-to-peer informal learning and is often discussed through an educational lens. Participatory culture's emphasis on shared affiliation, production of content (often remixed), and collaborative problem solving (Jenkins, 2006), fit well with Nerdfighteria's community-based ethos. For example, the pilot study revealed that Nerdfighters work collaboratively on charity projects ("Lending Team: Nerdfighters," n.d.), share content they created (such as gifs and memes), and work on both public and private community platforms. This study is focused on information needs and practices, however the framework of affinity spaces and participatory culture offer insight into a little examined community.

FANDOMS AND EMERGING COMMUNITIES

Scholarship has begun to recognize the role of fan culture in youth culture, though often from an examination of fanfiction sites and their participants. Fanfiction is a culture unto itself, with a language and norms that transcend the topic of the fandom (Jenkins, 2013). However, writers of fanfiction frequently feel the need to hide both their fandom and their fanfiction writing for fear of ridicule (Campbell et al., 2015; Hillman et al., 2014b; Jenkins, 2013; Korobkova, 2014). Nonetheless, fanfiction communities have been seen as powerful tools for learning (Campbell et al., 2015; Korobkova, 2014). Through fanfiction, writers can be both expert and novice and thus simultaneously learn and gain self-efficacy through sharing expertise (Campbell et al., 2015). Though often the fandom was the primary reason for a participant to join a fanfiction community, once there, writers often found that they learned multiple skills that were transferrable to their academic lives, such as writing, text analysis, and collaboration (Korobkova, 2014). Other researchers have examined how fanfiction authors can sometimes become leaders in their communities and take on additional, often technical roles, especially when mentorship facilitates learning (Fiesler, Morrison, Shapiro, & Bruckman, 2017). Fiesler, et al., (2017) describe the formation of Archive of Our Own (AO3) as an open source community dedicated to a wide array of fanfiction and examine the skills that are needed to run AO3. Fiesler, et al., (2017) recognized that the AO3 community may have a different experience with mentorship and learning from other open source projects like Wikipedia, because the culture and norms of AO3 were established first through the culture of fan fiction writers and the technical problems of developing and running a fanfiction site came second. Other open source communities came together around the

technical problem (e.g., an open source encyclopedia) and established a culture later (Fiesler et al., 2017). This finding suggests that the culture of fandoms can influence the learning that occurs in the fandom. The participants in the pilot study were greatly influenced by the culture of Nerdfighteria with regards to their engagement. The third research question, why do teens choose to obtain everyday information via the Nerdfighter online community rather than another community or another information source, will help expand these findings to a different kind of online community—one that is fan oriented, but not about content creation.

Emerging online communities, and most frequently the micro-blogging site Tumblr, played a prominent role in the fandom of the pilot study participants. Tumblr had been growing in popularity among teens (Hillman et al., 2014b; Lenhart, 2015), in part because they believe adults do not “get it” (Korobkova, 2014). Furthermore, membership in a Tumblr fan community is both open-ended and private. While users can follow a person’s Tumblr, there is no community to join, and membership can be anonymous (Hillman et al., 2014b). Interactions on Tumblr can range from reading a posting, liking it with a heart icon, reblogging it (sharing to your wall), and commenting (Hillman et al., 2014b). Commenting (Hillman et al., 2014b) is used less frequently than other forms of recognition.

Given the popularity of Tumblr during the pilot study, it was assumed that this dissertation would examine fandoms on Tumblr closely. However, participants in this study were less engaged in Tumblr than in other platforms. It is possible that Tumblr’s

popularity is waning. Instead, other new platforms emerged throughout data collection, specifically Discord, and became quite important. There is no current research on Discord and information practices.

NERDFIGHTER SCHOLARSHIP

Despite the large size of the Nerdfighter community, scholarship into any aspect of Nerdfighteria remains minimal. For example, on November 9, 2017, Google Scholar turned up just 27 hits for the search term “Nerdfight...” Kligler-Vilenchik is one of the few scholars to examine Nerdfighteria. Dr. Kligler-Vilenchik conducted an ethnographic comparative case study of Nerdfighteria and the Harry Potter Alliance to examine how the members’ engagement in a participatory culture that emphasizes collaborative learning might impact their engagement in participatory politics, for example taking part in a voter registration drive (Kligler-Vilenchik, 2013). She found significant overlap between the two communities, with a lower barrier to entry into Nerdfighteria (Kligler-Vilenchik, 2013). As noted earlier, becoming a Nerdfighter is simply a matter of self-declaration. This low barrier to entry, in part, resulted in less long-term political participation by the Nerdfighters, but a high level of episodic participation as issues or causes emerged in the community (Kligler-Vilenchik, 2016). One example would be Nerdfighter participation in crowd-sourced fundraising via the website Kiva or the Project for Awesome, which highlights and raises money for members’ favorite charities (“Kiva Lending Team: Nerdfighters,” n.d.; Kligler-Vilenchik, 2013). Kligler-Vilenchik’s study focused primarily on youth engagement in the political process, rather than broader questions of information practices. However, she did find that Nerdfighters felt

the community valued discourse and diverse opinion: “Nerdfighters express a strong appreciation for the value of discussion. Jo [the participant] noted that simply adopting the issues John and Hank see as important would be antithetical to the group’s values,” (Kligler-Vilenchik, 2013, p. 54). Furthermore, it is argued that fan activism in communities such as Nerdfighteria are powerful because of the ethos of information sharing in concert with the low barrier to entry (Kligler-Vilenchik, 2016). The pilot study affirms this finding. Nerdfighters interviewed during the pilot study indicated that they appreciated a community that valued discussion and actively discouraged rudeness or disrespect for different perspectives. This dissertation will elaborate on why teen Nerdfighters turn to their fan community to address their information needs and begin a scholarly discussion of this active but understudied community.

CONCEPTUAL FRAMEWORK

Because of the interdisciplinary nature of this research, this dissertation is informed by prior research from several fields, including everyday information practices, online communities, and fandoms. While retaining an information lens, concepts such as fandoms and affinity spaces inform this research.

INFLUENCE OF ELIS, EVERYDAY INFORMATION PRACTICES AND YOUTH INFORMATION BEHAVIOR

As the focus of this dissertation is on the information practices of teens in Nerdfighteria, ELIS, everyday information practices, and an examination of the role of lurkers form the foundation of the conceptual framework. This dissertation will integrate three different strands of the literature—teen ELIS needs, information practices, and typologies of

usage—to develop a more comprehensive understanding of teen information practices online.

The research questions and data collection instruments are informed by the conceptual framework and emphasize the kinds of information teens might interact with and their strategies for engaging or observing to meet an information need. For example, the survey asks teen participants, “Do you ever use Nerdfighter Media to find information?” This question is mirrored in the interview protocol and the diary prompts and is followed with a prompt to describe that experience (i.e., topic, platform, strategy). Additional questions probe the reasons for seeking information in the Nerdfighter community and the strategies to meet information needs. The observations will further examine the kinds of information sought in specific settings.

This dissertation assumes teens are active participants in constructing the knowledge that they need, and that they will select information practices that are right for them, rather than fit an existing model. Through examining the teens’ information needs and practices in a specific context, but across platforms, this dissertation will fill several gaps in the literature. First, it will describe the kinds of information teen Nerdfighters are seeking with an eye to their developmental stage. This dissertation will examine the information practices teen Nerdfighters use to meet their needs, recognizing that the teens make active and conscious decisions about their degree of involvement and the platform they select.

INFLUENCE OF TEENS IN ONLINE COMMUNITIES

As technology rapidly shifts and teens seem always a step ahead of adults and researchers, it becomes ever more important to understand how teens select and interact in online communities. Prior research has tended to focus on a single platform or a single information seeking problem. This dissertation explores the flow between platforms by asking teen participants to describe that practice, and to the extent possible observe such flows in online communities. Observations noted when participants suggested switching platforms and whether and why the participant made that suggestion. This dissertation will add to understanding of how teens navigate between platforms even as the platforms themselves are rapidly changing.

INFLUENCE OF FAN STUDIES

Teen fans have been frequently examined, though often from the perspective of content creation. Fans have only rarely been studied from the perspective of information behavior, and research examining the information behavior of teen fans is even rarer. As such, this dissertation fills a gap in the research by focusing on teen fans in a context other than fanfiction.

SUMMARY OF CONCEPTUAL FRAMEWORK

Though this dissertation is informed by fields such as fan studies, the focus remains on everyday information practices of teens in an online setting. This focus informs the design of the study, from the research questions to the data collection and analysis. Consequently, this study is based in several propositions, which are grounded in the gaps in the information studies field and which will be re-examined in light of the findings. These propositions are grounded in the literature discussed earlier but viewed

as intertwining aspects of the larger examination of online youth information practices and represented visually in Figure 2.9, Conceptual Framework of Teen Information Engagement in Online Communities, below.

- 1) Teens use their fan communities to engage in everyday information practices (Reijo Savolainen, 2008), which mirror their developmental needs as teens (Agosto & Hughes-Hassell, 2006b; Subrahmanyam & Šmahel, 2011).
- 2) Teens engage in a range of information practices from Actively Seeking, Active Scanning, Non-directed Monitoring, and By Proxy, which vary according to the degree of interactivity of the information seeker (McKenzie, 2003).
- 3) The kinds of information practices, types of information sought, and the strategies of observation vs. active engagement (McKenzie, 2003) are driven by the nature of the platform in combination with the norms of the community (Amichai-Hamburger et al., 2016; Preece et al., 2004).

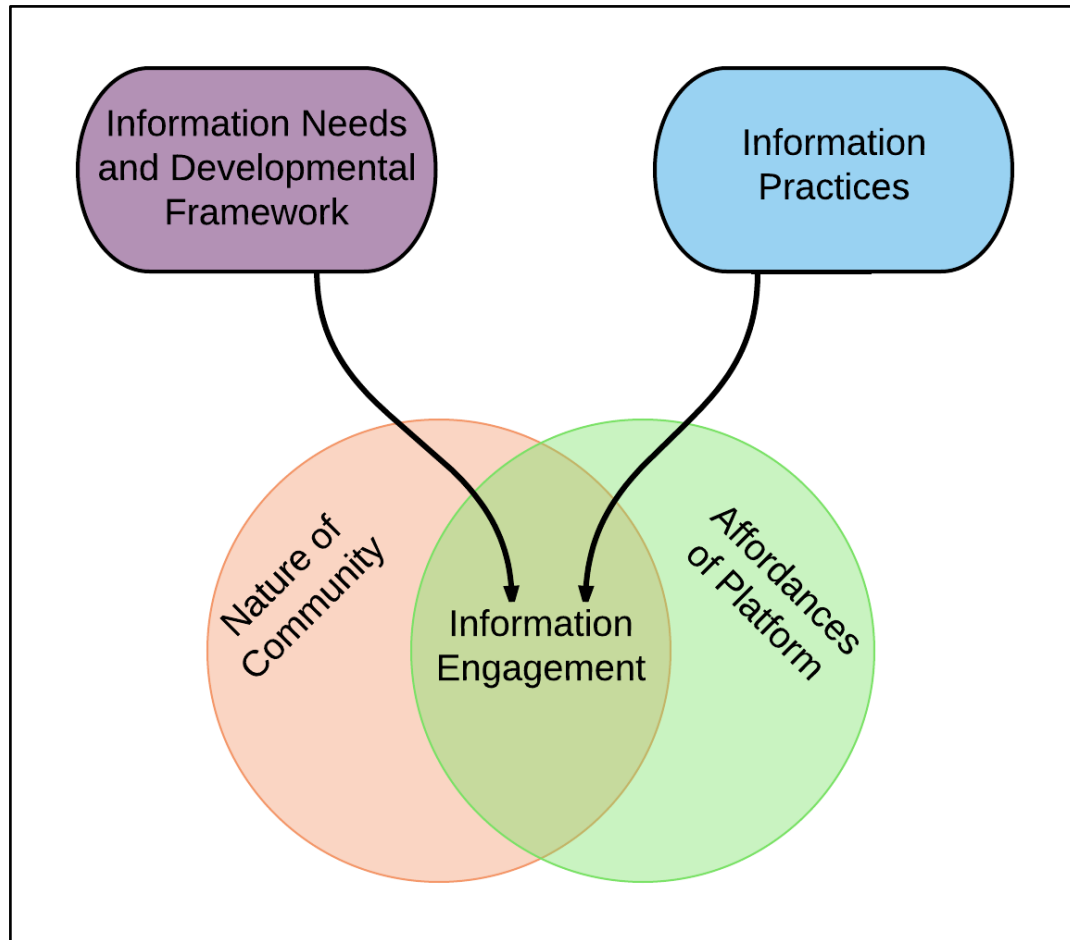


Figure 2.9. Conceptual framework of teen information engagement in online communities.

SUMMARY

Information behavior, ELIS, and youth information behavior are all areas of information practice that have been explored from a variety of angles and depths. However, as technology evolves there are shifts in information practices. For example, research is beginning to show (and the pilot study data concurs) that teens make careful choices in their selection of social media for different purposes (Agosto et al., 2012). However, scholars have only begun to trace teens' information pathways and to map their selection processes in the varied situations that everyday life can present. While online communities have been studied since the early days of the web (Preece, 2001), we only

know a little about the information practices of teens in communities and even less about lurkers in online communities. Nerdfighteria, the focus of this study, has not been studied at all, despite a large and active membership. This dissertation will integrate these disparate strands of research and contribute to scholarship and the public discourse around teens online.

CHAPTER 3 METHODOLOGY

OVERVIEW

This chapter will provide a detailed account of the methodology for this dissertation. It will begin with a discussion of qualitative methodologies broadly and then introduce the research design, an embedded single case study. Next, it will clarify the levels of inquiry used in this case study, describe participant recruitment, data collection, and data analysis in detail. Then it will describe steps taken to support the validity of the research process and the findings. Finally, it will also discuss ethical considerations when conducting research with minors online.

PROBLEM STATEMENT AND RESEARCH QUESTIONS

The intersection of everyday life information practices with youth information behavior and online fan communities is understudied in the academic literature. Nonetheless, we know that teens live much of their lives in online settings, using social media to gather information from a wide range of personal and other sources (Lenhart, 2015; Madden et al., 2013) and often participate in fan communities (H. Green, 2015b; Kligler-Vilenchik, 2016; Korobkova, 2014; Masanet & Buckingham, 2015). Existing research around teens online often focuses on a single platform such as Facebook (Asghar, 2015; Bond, 2016; Hillman et al., 2014a, 2014b; Marwick, 2005; Vraga et al., 2015), rather than exploring the reality of online engagement today. This study proposes to address these gaps by examining the intersection of everyday information practices with teens in a fan community, while recognizing the movement between platforms within a single community. Finally, as a researcher and educator working with teens, it is important to

hear and understand the voices and choices of teens in order to examine how they address their everyday life information needs and capture the realities of their lived experiences online and in real life. To answer the problems outlined above, I explore the following research questions:

- What types of everyday life information do teens seek in the Nerdfighter online fan community?
- What methods do teens in the Nerdfighter online fan community use to answer everyday information needs?
- Why do teens choose to obtain everyday information via the Nerdfighter online community rather than another community or another information source?

QUALITATIVE METHODOLOGIES

This dissertation was conducted using a qualitative case study framework, collecting data using survey, observation, interview, and diary, and analyzing data using grounded theory techniques. At times, qualitative methods have been open to critique by those who believe that numerical and quantitative data does the best job of representing reality. However, qualitative methods shift the emphasis from raw data to people's interpretation of their lived experience. Creswell (2007) notes that the purpose of qualitative research is to provide a complex and detailed exploration and understanding of an issue and to provide answers where quantitative methods cannot.

Many aspects of this dissertation would have been challenging to capture with quantitative approaches. Given the uncertainty around the size of the population of Nerdfighters, the openness of who constitutes a Nerdfighter, and the wide dispersion of the fandom on the Internet, it would be nearly impossible to establish clear population parameters—a basic requirement of the quantitative approach. Additionally, the research questions I propose are largely “how” and “why” questions, which are not well captured in quantitative studies. Lastly, capturing the experience and motivations of lurkers would be nearly impossible without a qualitative approach, leaving the findings capturing only a small slice of teens’ information practices. By examining the practices of teens in a qualitative framework, I can examine the teens understanding of their experiences, “...qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them,” (Denzin & Lincoln, 2005, p. 3, in Creswell, 2007). Indeed, Brandtzæg (2010) conducted a meta-analysis of research into media-user typologies and specifically references a need for qualitative approaches to develop understanding of media usage typologies and patterns, including understanding when users choose to observe vs. engage.

Qualitative methods excel at providing a deep and rich examination of a phenomenon in the real world and are rooted in an epistemological stance that respects alternate worldviews (Creswell, 2007). This study specifically draws from a constructivist epistemological framework, believing that teens are actively building their understanding of the world and their place in it. Rather than capturing a statistic about

their usage, this study will explore the lived experience and motivations of teens as they are examining their everyday life information needs. The design of this dissertation is an embedded single case study of teen members of Nerdfighteria. The details of the case study design are described in detail in the section below.

RESEARCH DESIGN: CASE STUDY

SINGLE CASE EMBEDDED DESIGN

This dissertation was structured as an embedded single case study. Yin describes five possible situations for a conducting a single case study: critical, unusual, common, revelatory, and longitudinal (Yin, 2014). Initially, this study was conceived as a common case, because its focus was to explore and capture “the circumstances and conditions of an everyday situation...related to some theoretical interest” (Yin, 2014, p. 52). This case study was believed to be common because participating in an online fan community is a regular practice for many teens (Campbell et al., 2015). Data from the pilot study supported the supposition that Nerdfighteria was a common case. However, as information gathering for this study progressed, it became clear that this community was, in fact, an unusual case. Yin (2014) notes that an unusual case is one in which the case differs from everyday occurrences, but often this deviation results in revelations about common occurrences. In other words, the aspects that make the case unusual are the very things that help illuminate what is common elsewhere. As it will become clear in the findings, the teens came to Nerdfighteria because, from their perspective, it was an unusual place. Participants described Nerdfighteria as being different from other places on the Internet. Indeed, one called it “a nice place on the Internet.” According to

Yin (2014), an unusual case is one, which deviates from theoretical or everyday norms. This case study, as an unusual case, helps us to understand what teens consider to be normal. As is the case here, Yin (2014) notes that one challenge of single case studies is that they may differ from what the researcher believed at the outset. Whether common or unusual, Yin (2014) asserts that the methods used would remain the same.

In this dissertation, the case was Nerdfighteria as a whole and the theoretical focus is everyday information practices. The participant group, teen Nerdfighters, bound this case study. Because of the dispersed nature of online communities, the case was only loosely bounded by physical geography; participants were selected from the United States or U.S. citizens living abroad. However, the case was tightly bound by online geography—those teens who participate in the Nerdfighter online community.

An embedded, single case design involves one case with multiple subunits and is appropriate in situations in which a single organization has multiple levels available to investigators. Embedded, single case studies are advantageous in that they “serve as an important device for focusing a case study inquiry” (Yin, 2014, p. 55).

Levels of Inquiry

1. Nerdfighteria as a whole: To understand Nerdfighteria as a whole, the founding documents of Nerdfighteria, specifically the videos, websites, and writings of John and Hank Green as it pertains to the community, were examined. The founding documents of all communities observed (see level two, below) in this study were also gathered and analyzed. Lastly, a survey of 241 teen Nerdfighters was conducted, with multiple goals: to compare the results to the three

Nerdfighter Censuses conducted through the VlogBrothers channel (Green, 2013, 2014, 2015) and the most recent data from the Pew Center for the Internet and American Life, and to compare the findings with specific research questions as noted below in Table 3.1. From this inquiry, a picture of the nature of the community and of the teens who participate in the community became clearer. This level of inquiry will allow me to answer the following questions to better understand teens in the Nerdfighteria. What are the expectations for being a member of Nerdfighteria? What are the norms? Who are the teen members? How does their engagement compare to that of a typical teen (as detailed by the Pew data)?

2. Public Nerdfighter communities: ultimately three, public online Nerdfighter communities—one targeted toward teens, one a video project about people’s discovery of Nerdfighteria and one targeted toward “homework help”—were followed and closely observed. The observation phase of this research began with an examination of a public Facebook group, the Nerdfighter Subreddit, Nerdfighter Tumblrs—specifically fishingboatproceeds.tumblr.com (John’s Tumblr) and edwardspoonhands.tumblr.com (Hank’s Tumblr)—a newly formed Nerdfighteria Ning, and the Teenage Nerdfighters Unite Forum on [Nerdfighteria.com](https://nerdfighteria.com). These initial platforms were selected because of their prevalence based on an informal assessment at the time of the dissertation proposal or because the community was referenced in the pilot study. Given the wide ranging nature of this community, the research remained open to

discovering other media and sub-communities as I collected data for this study (Charmaz, 2006; Glaser & Strauss, 2009). Based upon experience gathered during the pilot study on Nerdfighters, it was expected that new avenues for Nerdfighters to interact and exchange information would show themselves. As the study unfolded, the platforms observed shifted as the Nerdfighter community changed and evolved. For example, the newly formed Ning disappeared very quickly; however, the Nerdfighter community formed two Discord channels. Ultimately, the study focused in and observed three communities: 1) a teen Nerdfighter forum on Vanilla Forums, 2) a homework help sub-channel of the Tuataria Nerdfighter Discord, and 3) a Tumblr project entitled “The Road to Nerdfighteria.” These communities were chosen for two reasons: 1) they were open and public, and 2) they were geared toward teens, or teens would be easier to distinguish from other individuals posting in the communities. In this level of inquiry, the interactions on these platforms were documented. These interactions were multi-media in nature, encompassing text, video, still images, and audio. From this level of inquiry, one can see the nature of everyday information interactions taking place. This level of inquiry will allow me to answer the following questions: What kinds of questions or problems are posed? How are they answered? By whom? Why were teens coming to Nerdfighteria rather than another community?

3. Individual Nerdfighters: From the survey of 241 teen Nerdfighters as well as additional sources outlined below, 15 Nerdfighters participated in an in-depth

study. The 15 participants were interviewed, and all 15 participated in a month-long diary. Of the initial 15, 12 completed the second interview. This process and the rationale regarding participant numbers are outlined in greater detail below. This level of inquiry examines what kinds of information teens sought, how teens selected a platform within the Nerdfighter community to engage in everyday information, what methods they use to get their information needs answered, and why they turn to Nerdfighteria rather than another avenue. This level of inquiry will allow me to answer the following questions: Why did a question get asked on the Discord rather than YouTube Comments? Or was it asked in both places? In addition to directly asking questions, what methods did the teens use to gather information? Was the information gleaned satisfactory? Did the teen need to pursue other avenues? Did the teen switch between mediums (e.g., from a forum to messaging)? Why? Why come to Nerdfighteria with this information need?

LEVELS OF DATA COLLECTION

In an effort to achieve data saturation and triangulate findings, data collection was multifaceted. Data was collected through surveys, participant interviews, diaries, observation of online communities, and review of documents related to the online communities. Participant-based data collection consisted of a baseline demographic and usage survey, semi-structured interviews, a long-term diary, and follow up “diary-interviews,” and observation of Nerdfighter communities and their exchanges in all publically available media (textual, audio, visual, and video). Document-based data

collection consisted of a review of the founding and guiding documents for those communities. Each data collection strategy is described in detail below.

There were two levels of participation for teens: through a survey, and/or through an interview, a month-long diary and follow up interview. Recruitment for both levels was multifaceted incorporating broadly dispersed announcements and referrals. The survey also provided a recruitment opportunity for the interview and diary portion of the study. By conducting the study with multiple levels of participation, I was able to triangulate data where there was overlap, provide some baseline information on the composition of teens in Nerdfighteria, and generate rich qualitative data to answer the research questions.

INSTITUTIONAL REVIEW BOARD

This study was approved by the University of Maryland Institutional Review board on August 9, 2016, and the continuing review was approved on July 28, 2017. As this study is multifaceted, the IRB process included multiple components. In addition to the recruitment language (Appendix B), Parental Consent form (Appendix E), and Teen Assent form (Appendix F), the survey was approved for a consent waiver. There are four criteria in which consent can be waived:

1. The study presents minimal risk,
2. The waiver will not adversely affect the rights or welfare of the subjects,
3. The research could not practically be carried out without a waiver,

4. Subject will be provided with additional pertinent information after participation.

The survey met all four criteria and was therefore approved for a consent waiver with the IRB application.

This study was approved to recruit up to 300 participants in the survey and 25 in the interview and diary component. Throughout this study, steps have been taken to protect the privacy of participants. All interview and diary participants were assigned a pseudonym for the purposes of reporting. Survey respondents were anonymous. If they asked to participate in the study, only an email was collected at the end of the survey. Additionally, no direct quotes from the communities observed (the Tuataria Discord channel and the Teen Nerdfighters Unite Forum) will be used in this research; instead, summaries and paraphrasing of the teen interactions in public, enduring online platforms will be utilized. For example, when a member of the Forum posted about visiting colleges, I will not quote it directly in the findings or discussion, nor reference the specific college, lest someone search the community and identify the teen. The reason for paraphrasing and summarizing the enduring online interactions is to preclude the possibility that someone might search the quote and thereby identify a minor.

PARTICIPANT SELECTION AND RECRUITMENT

Survey

The survey was structured to include a screening question to assure that those completing the survey were in the 13 to 17 age range under examination. If a potential survey participant selected an age outside the 13 to 17 range, the next screen thanked

them for their participation and would not allow them to complete the survey. The link to the survey was shared via Nerdfighter platforms on Facebook, Twitter, the Teen Nerdfighters Unite Forum, and Tumblr. The link was also shared with pilot study participants and other active Nerdfighters for reposting. The largest response came when the survey was retweeted by Hank Green on January 10, 2017. Prior to that day, 14 teens had completed the survey. Following Hank Green's retweet, 213 additional teens completed the survey. By the following week, 233 completed the survey. The remaining respondents came over the next few weeks as the survey remained open and was reposted in the venues noted earlier.

The survey was completed by 241 teens. The average age was 15.93. Most participants became a Nerdfighter between ages 12 and 14. The respondents were overwhelmingly white (75 percent) and female (70 percent), although the categories for gender were broad and there was quite a bit of variation, which will be discussed in Chapter 4.

Interview and Diary

The interview and diary portion of the study received IRB approval for as many as 30. However, the study reached data saturation at 15 interview subjects. The interviews were conducted in three cohorts. The first cohort of 4 subjects was interviewed in January of 2017. The second cohort of 5 subjects was interviewed in March of 2017, and the third cohort of 6 subjects was interviewed in May/June of 2017. By the third cohort, themes emerged, and patterns of engagement were repeated between cohorts and subjects.

Data saturation in a qualitative study of this nature is often achieved at levels between 10 and 20 (Carter & Mankoff, 2005; Czerwinski, Horvitz, & Wilhite, 2004; Hyldegård, 2006; Kenten, 2010; Mehl & Conner, 2012). Table 3.1 summarizes sample sizes in studies relevant due to their methodological similarities. For example, Hyldegård's 2006 study of information studies undergraduates and graduate students used two separate diary techniques measuring ten and seven participants, respectively. It found that a diary, in conjunction with an interview, generated rich data with the number of participants. Guest (2006) conducted a meta-analysis of qualitative methods articles and found no consistent sample size recommendation. Guest also created an audit trail of coding processes for 60 interviews of African women discussing intimacy to determine when data saturation was met. 73 percent of codes were identified in the first six interviews and 92 percent were identified within the first 12. Guest then analyzed the relative importance of thematic codes, finding that 94 percent were identified in the first six interviews and 97 percent were identified within 12 interviews. Guest concludes that data saturation occurs at 12 interviews when the interview topics are consistent, the content knowledge is widely held, and the participants are relatively homogeneous (Guest, 2006).

Table 3.1 Relevant Studies and Sample Sizes				
Author	Main Goal of Study	Methods	Number of Participants	Population Studied
Czerwinski, Horvitz, & Wilhite, 2004	How do people handle multitasking and interruptions in the workplace?	Survey and Diary	11	Adult professionals between the age of 25 and 50
Hyldegård, 2006	To what extent does Kuhlthau's ISP hold up in group based projects and at the university level?	Diary and interview	17	Undergraduate and graduate students of information studies
Kenten, 2010	What are the ways that people are made aware of their sexuality in their day to day life?	Diary and Interview	23	Adult, non-urban, gay men and women
Korobkova, 2014	How does learning and networking manifest in a female dominated online fanfiction community?	Interview	25	Primarily female teen fanfiction writers
Moran-Ellis and Venn, 2007	How do children and teens navigate independence in sleep?	Diary (paper, online or audio) and Focus Group	17	Teens between the ages of 13 and 18
Savolainen, 1995	How does ELIS practices regarding "way of life" manifest across social classes?	Interviews	22	Finish adults in the middle and working class

Because the pilot study found recruitment to be challenging, participant recruitment strategies were multifold: (1) criterion sampling, choosing participants because they meet the criteria of being teen Nerdfighters, and (2) snowball sampling, identifying participants from "people who know people who know what cases are information rich" (Creswell, 2007, p. 127-128). The first recruitment strategy was to offer survey participants the option of participating in the interview stage. While 38 of the 241 completed survey evidenced interest in an interview, only four progressed to

completing assent and consent forms. Strategies for recruiting participants beyond the survey included:

- Outreach to youth service librarians who might have active Nerdfighter groups among their patrons.
- Outreach to active Nerdfighter clubs in high schools and colleges.
- Recruitment posts on active Nerdfighter communities such as Facebook, Reddit, Tumblr, Twitter, Teen Nerdfighters Unite Forum, and others.
- Snowball sampling: Participants in the pilot study and the dissertation study were asked to recommend this study to others.

Recruitment posts were the most effective strategy resulting in nine participants, and two of the 15 participants were recruited through snowball sampling of current participants. In promoting the interview recruitment in Nerdfighter communities in April of 2017, the recruitment text was pinned to the top of a VlogBrothers YouTube Video by John Green and retweeted by Hank Green. As a result of the pin and retweet, I received 20 inquiries about the study. Six ultimately completed the consent/assent process. The interview participants are described in Table 3.2, below. A table of the participants and their affiliated platforms are included as Appendix G.

Table 3.2 Interview Participants		
Pseudonym	Cohort	Age
Gabriella	1	15
Jeff	1	16
Madison	1	13
Riley	1	15

Claire	2	16
Lia	2	15
Mira	2	13
Rebecca	2	17
Sam	2	17
Ash	3	17
Chris	3	16
Emma	3	16
Gemma	3	17
Isabelle	3	15
Tyler	3	17

All participants signed assent forms and had a parent or guardian complete a consent form.

All of the initial 15 participants agreed to participate in the diary study. Due to recruitment lags, the interviews and diaries were completed in three cohorts: a February 2015 cohort of four people, a March/April cohort of five people, and a May/June cohort of six people. Of the 15 diary participants, all completed at least some of the diaries in response to reminders. All participants were given a stable URL to use if they found something interesting. Taken together, they completed an average of 69 percent of the prompts. One participant, however, completed the diary on a daily basis. Twelve of the 15 participants completed the second interview. One of the participants declined the second interview citing time constraints. Two other participants did not respond to several emails.

Recruitment Challenges

Recruitment for the interview and diary portion of this study was challenging. First, finding teens who were willing and able to participate, and return teen assent and parental consent forms, presented a barrier to teens who might otherwise participate. A

component of the promotion of the study by the Green brothers provided an additional challenge: a detailed and careful screening of age and location was required. Several people were unhappy to be excluded from the survey or interview component of the study because they were not in the right age group. As people in their early twenties, they conceived of themselves as “young adults” (the language in the IRB approved recruitment materials). Additionally, several teens were interested in participating in the interview, but were international and therefore ineligible; and they had no negative reaction to being screened out. Recruitment efforts for the survey were less challenging, likely because no consent was required for the survey and the time involved was minimal.

Recruitment efforts for this dissertation resulted in three interesting outcomes that likely affected the sample of participants. First, in promoting the survey through Nerdfighter communities as outlined above, recruitment was retweeted by Hank Green. This resulted in a huge and sudden uptick in participants, all of whom came from Twitter. Likewise, in promoting the interview recruitment in Nerdfighter communities, the recruitment text was pinned to the top of a VlogBrothers YouTube Video by John Green and retweeted by Hank Green. The likely effect was to disproportionately recruit survey participants from Twitter. Since YouTube is the baseline community for Vlogbrothers, that promotion is likely less impactful on the sample. Most Nerdfighters look at the YouTube videos, whereas not all Nerdfighters use Twitter.

SURVEY DEVELOPMENT

Due to the gap in scholarship on the Nerdfighter community, a baseline survey (Appendix A) was an appropriate choice to understand some of the details regarding the composition and uses for this community. Collecting survey data about the preferred means of accessing the Nerdfighter community further informed the interviews that followed, as well as the observations of the public communities. While John and Hank Green have conducted the Nerdfighter Annual Census (Green, 2013, 2014, 2015, 2016), the raw data is inaccessible. Furthermore, independent verification of the data they have shared through their YouTube channel is probably warranted.

The survey was developed using three sources: the research questions, the Nerdfighter Census, and publically available questions from the Pew Center for Internet and American Life. The goal of these questions was threefold: (1) to gather data in direct answer to the research questions and thus foster triangulation, (2) to compare the study population to the larger Nerdfighter census data where possible, and (3) to compare teen Nerdfighters with the general population of teens. Survey questions included demographic information about age, race and ethnicity, and gender, as well as questions designed to probe engagement with technology and social media generally, and the Nerdfighter community specifically. The survey was pilot tested by a participant from the pilot study and no problems were found. The survey questions are included as Appendix A. The findings of the survey are discussed in more detail in Chapter 4.

INTERVIEW AND DIARY DEVELOPMENT

The interview and diary were rich sources of information about the information habits of teen Nerdfighters. The interview protocol (Appendix C) and the diary protocol

(Appendix D) were developed in direct response to the research questions and were pilot tested with a participant from the pilot study. There were no changes as a result of the pilot test.

Interviews

Fifteen teen Nerdfighters, comprising three cohorts, were interviewed using a semi-structured interview technique via video conferencing. Most frequently, teens were interviewed via Google Hangouts, though some preferred Skype. All interviews were audio recorded using the researcher's mobile phone.

The goal of the interview was to determine what they do in the Nerdfighter community, which platforms they favor, whether they directly ask questions or whether they observe interactions (i.e., lurking), other locations the participants go to gather this information, why they turned to Nerdfighteria for their information needs, and how they evaluate the information they receive from Nerdfighteria. At the conclusion of the interview, all participants were asked if they would participate in a diary study, and all invitations were accepted. All interviews were audio recorded and transcribed by a professional transcription company. All recordings and transcriptions will be kept secure to protect the privacy of participants, as approved by the IRB.

The semi-structured interview protocol asked participants about their experiences in Nerdfighteria, how they participated in the community and which platforms they favored, and asked about their information habits from a variety of angles. Information habits were first probed from the perspective of a hypothetical (e.g., "Imagine a time when you needed to know something—more complicated than a

Google search—How did you find out? How do you decide where to go for an information need?”). As the interview progressed, the questions focused in more on the Nerdfighter community specifically (e.g., “Do you ever ask questions in a Nerdfighter community? Can you give me an example?”). The interview protocol also asked participants to reflect on which platforms they use for information and why and some general reflections on the community overall. The interview was semi structured, so during interviews I followed up on digressions, probed for more complete answers, and asked follow-up questions to clarify. The final question, which asked if there was anything else they thought I should know, almost always provided the richest data and anecdotes. There were no complications while conducting the interviews.

Diary

The diary was designed to capture the engagement of teens in real time. Participants were asked to respond to an online diary over a period of four weeks. This form of diary is considered a solicited diary and draws on experience sampling methods in which the participant is prompted at intervals to participate and reflect on their actions in real life situations (Bolger, Davis, & Rafaeli, 2003). Solicited diaries are considered especially useful because they both prompt participants with specific questions and allow participants to reflect before answering (Bolger et al., 2003; Carter & Mankoff, 2005; Hyldegård, 2006; Kenten, 2010). The diary was used to gather information about what the teens really do in Nerdfighteria, which platforms they have spent the most time on, their perceptions, and the kinds of information gathering they did during the previous 24 hours, thereby providing a level of ecological validity not found in survey and

interview methods alone (Mehl & Conner, 2012). As Kenten (2010) notes “as well as recording events, solicited diaries can also increase the visibility and significance of routine or everyday processes which might be regarded as mundane aspects of everyday life” (2010, p. 4). Participants received a text-based prompt via their digital device to complete the diary 3-4 times a week at different times each week. Within each cohort, the teens all received the same prompt at the same time. Participants were split in their preferred mode of reminder. Most elected to either receive a text message or an email. One asked to receive a Google hangout chat message. Figure 3.1 shows two sample prompts from the participant who elected to receive prompts via Google Chat.

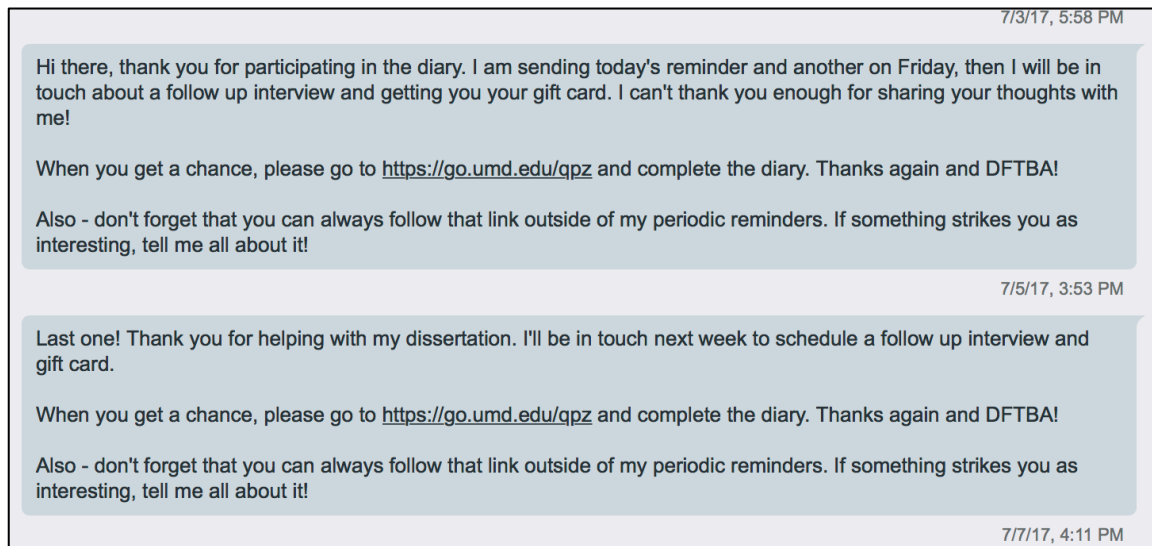


Figure 3.1. Sample diary completion prompt.

No participant indicated any problem with accessing the diary due to a lack of technology access. This was not surprising given the high saturation of cell phones in this age range and in the Nerdfighter community. According to recent data, at least 88 percent of teens have a cell phone, and the typical teen exchanges 30 text messages a

day (Lenhart, 2015). Survey respondents indicated that they are highly connected; 99.6 percent indicated that they were online either constantly or several times a day. Each participant was prompted to complete a diary entry up to 12 times over the four-week period. Should they choose to, participants were also able to complete additional diary entries through a stable URL, though that was not a common occurrence. The exception was one participant who completed the diary daily for a full month. As might be expected, engagement in the diary varied by participant, but all completed at least a majority of the prompts.

Seventy-five percent of diary entries showed that while teens had visited a Nerdfighter community in the last 24 hours, 86 percent did not post within that 24 hour period. 33 percent had a conversation with a fellow Nerdfighter friend online within the prior 24 hours. The diary provided insight into the daily practices of teen participants as well as some rich qualitative data about what was happening in Nerdfighteria.

Bolger, Davis, and Rafaeli (2003) note that mixing the design of diary studies between prompted and participant driven response can greatly strengthen the design by increasing the diversity of responses. Qualtrics software optimizes for smartphone usage. A sample question is included below both as it would appear on a computer and as it would appear on a smartphone (see Figures 3.2 and 3.3). Diary prompts were informed by the literature, the findings of the pilot study, and the interviews. Sample diary prompts are included as Appendix D. Diary prompts included:

- Have you visited a Nerdfighter community in the last 24 hours? Which ones?

- What did you do there? Did you write a post? About what?
- Did you have a conversation with a Nerdfighter friend online? Yes, about what?
- Which medium did you use (FB chat, iMessage, etc)?
- What else is going on in Nerdfighteria today from your POV? What should I know about?

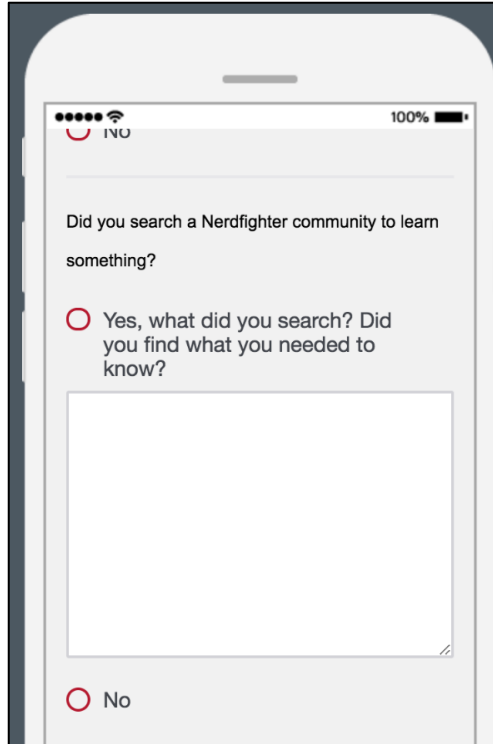


Figure 3.2. Sample question as it would appear on a smartphone.

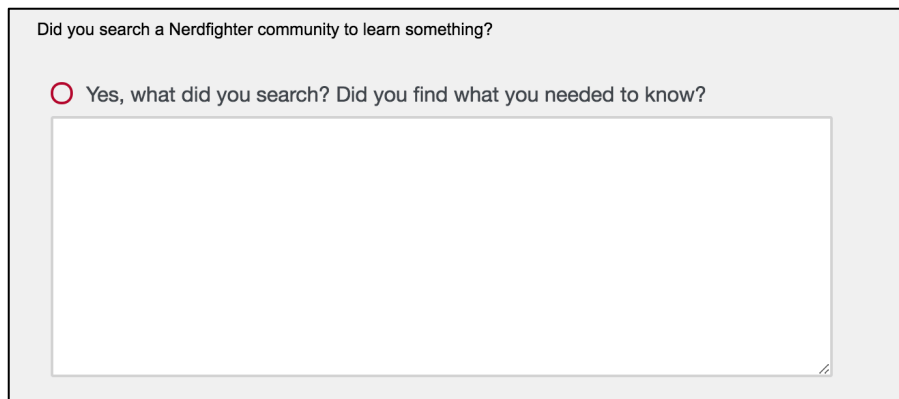


Figure 3.3. Sample question as it would appear on a computer.

Post-Diary Interviews

Following the completion of the diary, all participants were invited to participate in a post-diary interview to gather their thoughts and their current perceptions of how they use the Nerdfighter community. Twelve of the 15 interview participants completed a second interview after completing the diary. As this interview was based on the results

of the diaries, interview protocol varied, though it generally followed the outline of the initial interview and included clarifying questions that were raised by the diary or from a review of the initial interview. Diary interviews have an additional advantage, in that they provide an opportunity for the participants to reflect more deeply on the experience, to share reflections they might not have wanted to put in writing, and to clarify any ambiguities in responses (Kenten, 2010, p. 5). The degree of reflection in the diary varied greatly among participants and thus the level clarifying and probing questions varied as well. All twelve participants who were re-interviewed repeated the semi-structured interview. Often participants noted that they had thought of something after the first interview was completed and had some clarifications, or that they had reflected on their experience as a Nerdfighter as a result of the interview.

Participant Compensation

Interview and diary participants were compensated with a gift card for their time and effort, depending on their level of participation (Table 3.3). This strategy was employed to encourage the retention of participants throughout the study. Though I offered a range of options for how to receive their gift card, all but one chose to receive an Amazon gift card. The lone exception chose to have her incentive donated to a local refugee charity.

Table 3.3 Level of Participation	
Participation	Compensation
First interview only	\$5
First interview and completing most of the diary prompts	\$15

First interview, completing most of the diary prompts, and post-diary interview	\$20
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ADDITIONAL AVENUES OF DATA COLLECTION

Public Interactions on Nerdfighter Communities

Nerdfighteria is a widely dispersed community. There are active sub-communities on every platform of social media that was reviewed in the initial inquiry stage. However, based on the pilot study conducted in the spring of 2016, Facebook, Tumblr, YouTube, Reddit, and the Ning were among most commonly used sites. There was also an active teen Nerdfighter forum on Vanilla Forums known as Teen Nerdfighters Unite! (TNU). The intention of this study was to observe these communities and any additional forums that developed or came forward during the study. However, between the acceptance of the dissertation proposal and the beginning of data collection, the Ning closed. Additionally, Reddit and Tumblr proved to be less rich than initially thought; both primarily consisted of reblogs and reposts. While there is Nerdfighter content on both of these platforms, it was nearly impossible to identify who was in the targeted age group. Finally, the most likely Facebook community, Nerdfighteria, became a closed group.

However, in the winter of 2017, two Discord channels opened. The Tuataria Nerdfighter Discord was open, thus observable. This channel was formed to facilitate sharing information around a scavenger hunt, but it quickly spawned numerous sub-channels. In order to most likely observe the desired age group, a “Homework Help” channel was observed, by pulling and reviewing several weeks of interactions. These interactions were not coded for ELIS topics, as they would skew the data unfairly toward

school topics; however, interactions were observed for the kinds of information seeking practices and strategies. The teen Nerdfighter forum remained in existence and active. During this information gathering phase, six months of interactions from Teen Nerdfighters Unite (TNU) was observed. Finally, I viewed videos from The Road to Nerdfighteria, in which people reflected on how they became Nerdfighters. To protect the privacy of the teens, paraphrasing or aggregated data from coding was used in lieu of direct quotes, as described in the section describing the IRB processes for this study. In order to observe some communities, it was essential to be visibly present in them. For example, chat rooms associated with communities require that one be identifiable by at least a username in order to be in the “room.” The Discord is open to anyone with the link, which is widely and publicly available, but you must have an account with a name to view any channel.

One challenge in collecting this data was affirming that the community participants are in fact in the selected age range. In conducting this study, I examined the participant and their profile for evidence of youth. For example, posting about high school classes, learning to drive, prom and so on, were typical indicators that a participant was likely a teen. On the Discord, asking about high school-level classes was an indication that the poster was a teen. University of Maryland IRB has approved this aspect of the study, as interactions are considered public and therefore not subject to the same consent process as is typically used with minors.

Founding and Guiding Documents

For the selected communities as outlined above, the documents that guide their creation and interactions were gathered and analyzed. Specifically, codes of conduct, rules, and posts from community administrators were pulled and documented. The participants in the interviews, the teens observed in public communities, and those in the pilot study strongly indicated that the norms of the Nerdfighter community supported the risk-taking inherent in pursuing everyday life information, especially information of a sensitive nature. Consequently, any documentation pertaining to the norms, values, and rules of the communities being observed were pulled and recorded.

Additional Events in Nerdfighteria

This study explored an understudied area of online communities and focuses on the lived experiences of teens in a rapidly changing technological environment. As the study progressed, there was an expectation that unanticipated sub-communities, media, and documentation would present itself. It became necessary to explore, gather data, and conduct analyses beyond the bounds outlined in the proposal. Indeed, over the course of data collection, several things happened to change the data collection sources and to reshape the Nerdfighter community.

In October of 2016, the Green brothers announced NerdCon—a convention of Nerdfighters in Boston, MA, on February 25 and 26, 2017. This announcement galvanized the community. Instantly there was discussion on the boards and among the interview participants about who was going and who was putting in a panel proposal. Those who were able to attend started a Facebook Group, which spawned several

subgroups on Facebook and elsewhere, and which persisted at least into the Fall of 2017, a full nine months after the event.

In January of 2017, John Green announced a new scavenger hunt in his weekly video (Green, 2017). This announcement led to increased excitement and engagement across the Nerdfighter channels and among the interview participants. To accommodate discussion of the scavenger hunt, John Green opened a Discord channel called Tuataria (for reasons that are not relevant to the research), which quickly took off and spawned numerous non-scavenger related sub-channels. Over the data collection phase, more and more subjects began to refer to the Tuataria Discord and its sub-channels. There is also a Nerdfighteria Discord channel, which is active, but during the observation period it was not as active as the Tuataria Channel.

The scavenger hunt culminated in the announcement of a new book by John Green titled *Turtles All the Way Down* (Green, 2017a). Again, this energized the community and led to many discussions about the book, the title, and the community. Hank Green then announced his own book deal in September 2017, which also prompted interest.

Finally, the Green brothers announced a U.S. tour promoting the book, their podcast, the Vlogbrothers, and the community. Tour tickets were relatively inexpensive and included a signed book. There were nineteen stops, many of which sold out within a few weeks.

Each of these events in Nerdfighteria impacted data collection in that they reenergized a community that had been, in the eyes of some of its own members, getting stale.

DATA ANALYSIS

The data illuminated the role of the Nerdfighter community in everyday life information practices of teen members and the strategies those members use to meet their everyday life information needs. In qualitative research, triangulation of data is the best method for providing higher levels of confidence in findings. Yin (2014) notes that triangulation can be by data source, method, researcher, theory, or data type. Thus, to foster triangulation, data was analyzed within and across categories. For example, surveys, observations, interviews, and diaries were all analyzed and coded in the aggregate and with an eye to each individual participant. Founding documents were examined in light of the research questions, literature, observations, and participants. Miles, Huberman, and Saldaña (2014) describe triangulation as a “way of life,” noting “in effect, triangulation is a way to get to the findings in the first place—by seeing or hearing multiple *instances* of it from different *sources* by using different *methods* and by squaring the finding with others...” (Miles et al., 2014, p. 300, emphasis theirs). Each research question was addressed through multiple data sources, as outlined in Table 3.4, below.

Table 3.4
Research Question and Related Data Source

	Survey	Interview (pre- and post-diary)	Diary	Observation	Document Analysis
RQ1: What types of everyday life information do teens seek in the Nerdfighter online fan community?	X	X	X	X	X
RQ2: What methods do teens in the Nerdfighter online fan community use to answer everyday information needs?	X	X	X	X	
RQ3: Why do teens choose to obtain everyday information via the Nerdfighter online community rather than another community or another information source?	X	X	X	X	X

Data analysis was conducted using Dedoose (an online mixed methods data analysis software), Excel, and Lucid Chart (to create visual aids).

Data analysis took inductive approach and used grounded theory techniques. Miles, Huberman, and Saldaña (2014) describe an inductive approach as finding and refining relations between phenomenon progressively throughout fieldwork. The goal of an inductive approach is to end up with a causal chain within the data for the phenomenon under study. In congruence with Charmaz' constructivist approach to grounded theory, data analysis began with open coding using etic and emic codes (Charmaz, 2006; Miles et al., 2014). Charmaz, in a shift from Glaser and Strauss, takes a more open stance toward referencing prior knowledge (Charmaz, 2006; Glaser &

Strauss, 2009). Etic codes were drawn from the research questions and from existing literature on the ELIS practice of teens and on participatory culture; emic codes came from the data itself.

“Initial codes are provisional, comparative, and grounded in the data,” (Charmaz, 2006, p. 48). Examples of etic codes include *Types of ELIS*, *Maturation*, and *Needs Gratification*, and were drawn from the research questions, Agosto and Hughes-Hassell’s empirical model of the ELIS needs of urban teens (Agosto & Hughes-Hassell, 2006b), and Amichai-Hamburger’s (2016) work exploring typologies of online engagement. Examples of emic codes include *Negative Aspects*, an in vivo code, *Evaluating*, a gerund code, and *Intellectual*, a descriptive code. The initial codebook was quite large, with the majority of codes falling under the primary etic code *Types of ELIS* or the primary etic code, *Nerdfighter Groups*. *Types of ELIS* refers to research question 1: “What types of everyday life information do teens seek in online fan communities?” *Nerdfighter Groups* refers to research question 2, “What methods do teens in fan communities use to answer everyday information needs?” Interviewees and observations of Nerdfighter sub-communities were the primary sources for *Types of ELIS* codes, whereas *Nerdfighter Groups* came primarily from the interviews and diaries.

These secondary codes were emic and included descriptive, in vivo and gerund codes. Through constant comparison, many of these secondary etic codes were consolidated under etic codes tied to the conceptual framework. Thus, a new layer of secondary codes focusing on the conceptual framework was clarified, and the earlier

codes were consolidated down to tertiary and primarily emic codes. See Table 3.5 as an example.

Table 3.5 Etic and Emic Codes			
<i>Primary Code</i>	Secondary Code	Tertiary Code	Code Type
<i>Types of ELIS</i>	Cognitive Self		
		Current events / social issues	Etic
		Literature / Books	Emic
		Politics	Emic
		Science	Emic
		Weather	Emic
		Extra-curricular activities	Etic
		History / social sciences	Emic
		Studying	Emic
		Math	Emic
	Emotional Self		
		Emotional support	Etic
		Family	Etic
		Religion	Etic
		Mental Health	Etic
	Social Self		
		Hanging out	Etic
		Humor	Etic
		Jokes	Emic
		Music	Etic
		Overlapping Fandoms	Emic
		Relationships	Etic
		Scavenger Hunt	Emic
		Sports	Emic
		NerdCon	Emic
		Television Shows	Etic
		Tech	Emic
		Travel	Emic
		Movies	Etic
	Physical Self		
		Appearance / fashion	Emic
		Health	Emic
	Creative Self		
		Hobbies	Etic

		Side Projects for Personal Interests	Emic
	Sexual Self		
		LGBTQ	Etic
		Sex	Etic
	Fan Self		
		Turtles all the way down	Emic
		Service to Fandom	Emic
		Vlogbrothers	Emic
		Nerdfighteria	Emic
	Reflective Self		
		Charity Not P4A	Emic
		College	Etic
		Ethics	Emic
		Future Goals / Jobs	Etic
		Identity	Etic
		Project for Awesome	Emic

Throughout the process of collecting and analyzing data, continual reflective memoing was necessary for the data gathering phase. Both Charmaz (2006) and Glaser & Strauss (2009) strongly emphasize the need for ongoing memoing to capture the developing findings. Through careful reflective memoing of these themes and relationships, axial codes emerged (Charmaz, 2006; Glaser & Strauss, 2009; Miles et al., 2014). While this process is represented here as though it was linear, in reality grounded theory coding is frequently recursive; as the researcher moves between data collection and data analysis, coding is provisional and used to help identify both themes and gaps in the data (Charmaz, 2006; Glaser & Strauss, 2009).

VERIFICATION AND VALIDITY

Generally qualitative research does not make sweeping claims of total objectivity or generalizability. This study takes a constructivist stance toward knowledge creation,

while also recognizing the vulnerabilities of a qualitative case study. To balance possible concerns about researcher bias or flawed interpretation, Yin (2014) offers four tests: Construct Validity, Internal Validity, External Validity, and Reliability (p. 33). This section will outline each of the four tests and the steps taken by the researcher to meet the tests.

CONSTRUCT VALIDITY

Yin (2014) offers three suggestions to meet construct validity: multiple sources of evidence, chain of evidence, and review by key informants. The goal of these strategies is to ensure that the study's operational structure is such that the research questions can be answered by the data collection and review.

To meet the goal of multiple sources of evidence, the study was designed to triangulate data from several sources including surveys, observations, interviews and diaries, and documents. Critical to this component—the survey, observation, and interview have minimally overlapping participants. Therefore, each component is largely independent. Four of the 241 survey participants completed the assent and consent process to be interviewed, but most interviewees were not survey participants. A single member of the Teen Nerdfighters Unite! Forum was also an interview participant.

Chain of evidence describes the degree to which the reader can follow the evidence and analysis of the researcher from the research questions through the report and including data collection and analysis. To address questions of chain of evidence, this dissertation includes a detailed and lengthy review of the methods of study, data

collection and analysis, largely contained within this chapter. In addition, Chapters 4 and 5 contain numerous visual displays of the data in the form of tables, charts, and graphics to help the reader link the data to the findings.

Finally, Yin recommends a review of the study by key people. Two approaches were used for this. First, the researcher offered, shared, and sought feedback on transcripts with all participants. Secondly, the research recruited a colleague who is an Assistant Professor at another institution who studies youth information behavior, information intermediaries, and information policy as it affects youth information access, to examine the codebook and sections of data in light of the research questions, literature review, and conceptual framework. The colleague first examined the code book in relation to the research questions and the literature review. Once agreement was reached on the code book, the colleague then reviewed a random sample of 5 percent of coded excerpts to determine if the researcher's coding was accurate. The colleague was sent a spreadsheet containing excerpts and codes for review. The colleague agreed with all the codes assigned by the researcher but did suggest additional codes for some excerpts. These new suggestions were reviewed and incorporated where appropriate. Where the codes were not in agreement, the cause was typically because the context of the excerpt, which was not visible to the reviewer, impacted the code assigned. In some instances, the reviewer noted additional avenues for study, which while interesting, were not undertaken at this time (i.e., examining teen Nerdfighters' parental relationships).

This process of examining the coding schema in detail with a colleague acting as a reviewer was useful. By considering the data through another's viewpoint, a richer understanding of the data developed. While additional avenues suggested by the reviewer were not, ultimately, taken, the suggestions were quite useful to broadening the perspective on the research. For example, the reviewer noted instances where privacy questions might be interesting to study. Was the participant or Forum member aware of privacy and security? When teens move so fluidly between platforms, even if they are using different names, as was often the case, are they negatively impacting their privacy? These are interesting questions to pursue in the future.

INTERNAL VALIDITY

Internal validity is considered the believability or trustworthiness of the study. Do the findings make sense in light of the research questions, data collection, and analysis? Yin (2014) first suggests that unless one is attempting show a causal relationship, internal validity is not required (p. 35). However, Miles, et al., (2014) disagree and suggest numerous ways to address and strengthen internal validity in a qualitative study. In recognition of the importance of rigor, this dissertation addresses internal validity through seeking negative explanations, developing and explaining detailed confirmation procedures, and triangulation.

Negative explanations were sought in several ways. First, interview participants were intentionally probed to seek disconfirming information. When a participant expressed a rosy view of the Nerdfighter community, they were asked to think about any negative experiences they might have had or observed, for example. Secondly, the

data was reviewed and coded multiple times in an attempt to look for alternative explanations. Finally, multiple passes at the findings were made against theory to look for areas of difference. This dissertation includes a detailed explanation of the procedures for collecting and examining the data in an effort to confirm the data as described in both this chapter and in chapter five. Finally, as discussed earlier, this dissertation triangulated its data in several ways. There were numerous different methods (survey, observation, interview, diary, and document) and kinds of data (audio, text, quantitative demographic data, and video), which were then compared to each other. Most often, because this was the largest quantity of data, the interview, diary, and survey were compared to determine if findings were consistent. In some cases, as noted in Chapter Five, the survey data diverged somewhat, primarily around the question of what strategies teens used to meet their information needs. The likely explanation for this difference is that the survey was drawn largely from Twitter users. This explanation was validated by the data because the interview participants who were heavier Twitter users had similar experiences to the survey population in that they were less likely to ask directly for information and were more likely to observe or search without directly engaging.

EXTERNAL VALIDITY

Yin (2014) asserts that the goal of a qualitative case study is analytical generalizability through external validity. In other words, to what degree can we say that a given study speaks back to the theory? Yin (2014) goes on to clarify that the generalization is “not automatic... A theory must be tested through replication of the findings” (p. 36). Miles,

et al. (2014), however, offer several suggestions to increase the strength of external validity in a qualitative study. For example, including “thick” descriptions and relating the findings to prior theory. Thus, this dissertation includes lengthy and detailed descriptions of the participants, their contexts, and their interactions, as well as a detailed discussion of the relationship between the findings and the theories that underlie the conceptual framework.

RELIABILITY

This study endeavored to be as reliable as possible and used the framework put forth by Miles, et al., (2014), and the proscriptions of Yin (2014), to bolster reliability. Miles, et al., (2014) describe reliability as creating stability and consistency across the study through clear research questions which are linked both to theory and to method, and analysis to confirm that there is convergence in accounts via review by peers and colleagues. Yin (2014) has similar suggestions, with the addition of detailed documentation of the protocol.

In order to foster reliability, this chapter and the preceding chapter focus on the relationship between the research questions, prior research and theory, and the methods used to find, gather, and analyze the data. In addition, because this study was a solo effort, the researcher asked a colleague to review the data and the coding schema, as discussed earlier. Further, the researcher kept detailed running memo throughout the study to document the entire process of conducting the study. This memo includes both day-to-day information, such as what was accomplished on a given day, theoretical reflections on the relationship between the emerging data and the

literature, decisions that undergird the entire study, such as the strategies for recruitment, and unforeseen events that impact the outcomes, such as the study announcement being retweeted by Hank Green.

ETHICAL CONSIDERATIONS

This research presented no direct dangers to participants. However, it is imperative to be cautious when working with minors. Furthermore, the pilot study turned up a surprising prevalence of sensitive issues in the ELIS practices of teens online, such as sexual orientation and gender identity. As a result, in conducting this study, every consideration was made to protect the privacy of the participants to the utmost extent. All data was kept on a password-protected computer, inaccessible to anyone but the researcher. Any paper records were kept in a secured file in the researcher's home or at an office at the University. The study was conducted in accordance with and under approval of the University of Maryland's Institutional Review Board.

CHAPTER 4 FINDINGS

To begin a discussion of the findings, I will first describe the community at large, using the data from the survey. Next, I will provide a review of each research question in light of the data collected. Included in this review will be a description of the sub-codes and their origin (etic or emic), as well as examples and analysis. The following chapter will draw some overarching conclusions about the nature of everyday information in the lives of teen Nerdfighters.

AN OVERVIEW OF NERDFIGHTERIA

As noted in the introduction, Nerdfighteria is a community of fans of John and Hank Green. The Green Brothers inadvertently created Nerdfighteria when they began their YouTube channel, known as VlogBrothers, in 2007. Because John Green is a well-known young adult fiction author, the Green Brothers have always attracted many followers who fall in this study's target demographics. However, the development of the YouTube channels, Crash Course, in 2011, and SciShow, in 2012, greatly expanded their reach, by creating explicitly educational content that numerous participants discovered through their teachers or self-directed efforts to study. Additionally, the blockbuster status of John Green's sixth book, *The Fault in Our Stars*, released in print in 2012 and as a major motion picture in 2014, dramatically expanded interest in Nerdfighteria.

Teens in Nerdfighteria are highly connected. Teens used their smartphones to connect online, with 72 percent responding that smartphones were their primary way of accessing the Internet. 72 percent report watching the VlogBrothers' videos as soon as

they are released. 54 percent say they definitely or maybe use Nerdfighter media to find information; responses included getting homework help, working collaboratively on the Scavenger Hunt, and checking the Green brother's take on current events or political issues. 61 percent say they comment or post rarely or never.

DEMOGRAPHICS OF SURVEY POPULATION

The survey was limited to teens between the ages of 13 and 17. The survey link was retweeted by Hank Green. As a result, the survey responses came largely from a single day and likely skewed heavily toward those Nerdfighters who are Twitter users. As I will explain in the discussion of the second research question, which refers to how teen Nerdfighters meet their information needs, the experiences of Nerdfighters who primarily use Twitter are different from those who engage in the Nerdfighter community in other ways.

Age of Participants

The survey began with a screening question in which each participant was asked their age. If their age was outside this range, they were unable to complete the survey. 1003 people attempted the survey, but only 241 were able to complete it after the screening question. The average age of respondent was 15.93. For comparison purposes, this closely mirrors the ages of interview participants. Of the 15 participants, the average age at the time of the interview was 15.67. In the 2016 Nerdfighter census, this demographic made up approximately 32 percent of respondents (H. Green, 2016). This number is approximate because the Nerdfighter census asks for age ranges (i.e., 13-15, 16-18) which goes slightly beyond the ages in this study.

Gender in Nerdfighteria

Gender in Nerdfighteria is a complex question. Prior research with Nerdfighters showed that gender identification was not likely to be exclusively binary, and for many individuals gender represented a range of possibilities, some of which were combinations. Therefore, the gender question in the survey was worded as “How do you identify?” with the option of many choices (drawn from the 2015 Nerdfighter Census), the ability to add other, and the ability to choose check all that apply. For example, a respondent might have identified as male AND genderqueer. The choices listed matched the 2014 and 2015 Nerdfighter Censuses (H. Green, 2014, 2015b), the two most recent censuses at the time of survey development. And like the censuses, terms were not defined. Respondents skewed female. Looking at selections, with an eye toward those who chose a solely non-binary identification, the sample still skews female. In fact, 79.75 percent of respondents (n=189) selected female, 11.39 percent (n=27) selected male, and the remaining 8.86 (n=21) selected a non-binary identification as their sole gender identity. However, the 8.86 percent referenced above selected *solely* a non-binary gender identity.

Gender identity is a rapidly evolving sphere of research and societal change. As such, there is not consensus yet on what percentage of the general population identifies as something other than solely male or female. However, in research conducted at the UCLA Center for Health Policy Research, 4.5 percent of respondents aged 12-17 identified as “gender non-conforming.” (Knittel, 2016). While not a perfect match for this study, it does suggest that Nerdfighteria has a larger percentage of teens who are

gender non-conforming than, at a minimum, the state of California. From these findings, I can infer that Nerdfighteria has a greater percentage of gender non-conforming teens than the general population of the United States.

In examining the full range of choices, as in those who chose, for example, female *and* something else, the picture was even more complex. Figure 4.1, below, illustrates this complexity. The female ratio becomes more in line with the Nerdfighter census, but almost 21 percent chose multiple gender identities (at times including female) and/or a non-binary identification. The percentage of those who chose solely male dropped even further, to 9.82 percent. The most common non-binary choice was Questioning (5.45 percent), but both Androgynous (3.64 percent) and Genderqueer (3.27 percent) were popular choices as well. I can assume, therefore, that there is a reasonable chance any teen in this community may identify as something other than a binary male/female gender exclusively.

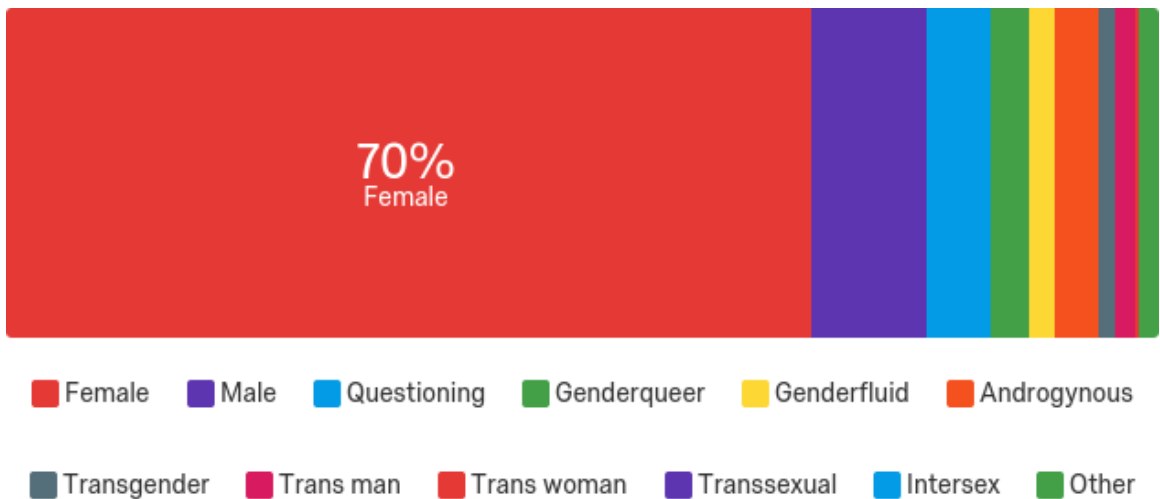


Figure 4.1. Representation of gender identity in survey.

One additional point of comparison: The 2016 Nerdfighter Census also skews female, but not so strongly. For example, 65.25 percent (n=67401) identify as female, 31.42 percent (n=32457) identify as male, and only 3.33 percent identifies as gender non-conforming (H. Green, 2015b). There are several possible explanations for this disparity. First, the Nerdfighter census is not age limited; more than half the respondents were over 18. Either this dissertation's survey respondents are more likely to identify in gender non-conforming ways, or teens overall are more likely to identify as gender non-conforming. To probe this distinction more fully, I searched for good sources of information on gender identification with teens. As a comparison, the California Health Interview Survey found that .35 percent of adults (ages 18-70) identify as gender non-conforming (Herman, Wilson, & Becker, 2017) but 4.5 percent of respondents aged 12-17 identified as "gender non-conforming" (Knittel, 2016). Therefore, it makes sense that a higher percentage of the survey sample would identify as other than male or female. In the video describing the data, Hank Green notes that YouTube analytics finds viewers of the Vlogbrothers videos are roughly 50/50 male/female (Green, 2015). However, survey respondents are more likely to be female. One additional possible explanation for these survey results may have to do with the heavy presence of Twitter respondents. It is possible that Twitter-using Nerdfighters are more likely to be female and/or gender non-conforming. Lenhart (2015) did find that teen Twitter users were more likely to be female, and that among older teens (ages 15-17), that division was stronger.

Race and Ethnicity in Nerdfighteria

The survey sample also skews heavily white. Figure 4.2, below, shows the racial and ethnic breakdown of respondents. Data indicates that 74.5 percent (n=196) identified as white, 10.27 percent (n=27) identified as Asian, 6.46 percent (n=17) identified as Hispanic/Latino, 3.42 percent (n=9) identified as Black, 2.66 percent (n=7) identified as Middle Eastern/Arab, 1.14 percent (n=3) identified as Native American, and 1.52 percent (n=4) identified as Other (note: these categories again matched those from the Nerdfighter Census). Survey respondents are less white than in the prior three Nerdfighter censuses, in which 85 percent of respondents selected non-Hispanic white (H. Green, 2014, 2015b, 2016)

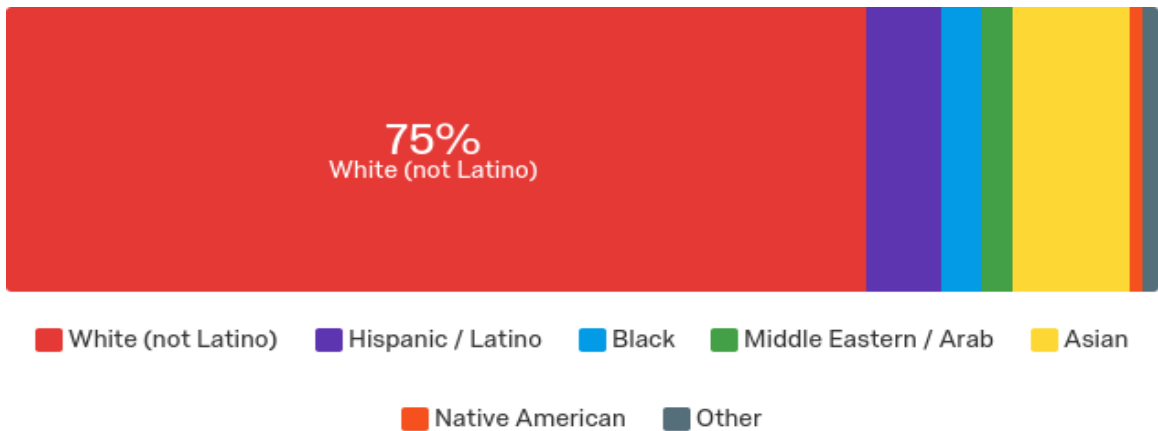


Figure 4.2. Representation of Race/Ethnicity in survey.

Nerdfighters Online

Survey participants spend a large amount of time online and connected to the Internet. To compare the frequency that teen Nerdfighters were online to the general population, this question on the survey is identical to the Lenhart's (2015) question in her study of teen technology habits for the Pew Research Center. For example, survey participants responded that they are online either constantly (48.95 percent, n=116) or several times

a day (50.63 percent, n=120). While I expected a high level of connectivity in this generation, this exceeds the connectedness found in the Lenhart's 2015 study, which found that 92 percent of teens were connected daily at least daily and only 27 percent constantly (Lenhart, 2015). It is possible that the level of connectedness simply increased during the intervening two years, or it is possible that this sub-population of teens is particularly connected. It is also possible, perhaps even likely, that people who are part of an online community spend more time online than the general population. However, given the ubiquity of smart phones and social media in the lives of teens, it is hard to know for sure.

Nerdfighter Platforms and Sub-communities

Through my interviews with 15 individuals, and my observations of the communities noted earlier, I was able to track 37 separate Nerdfighter groups, ranging from the original YouTube channels to tiny subgroups in Google Hangouts. The groups themselves are mapped below. It is important to note that a teen's experience with, and engagement in, Nerdfighteria is highly influenced by the groups they have found and are affiliated with. For example, Madison, who was an early interview subject, was a fairly lonely 13-year-old. Homeschooled and in a smaller city, they self-described as "quirky" and "a lone awkward." They loved Nerdfighteria, but primarily engaged via the VlogBrothers YouTube comments (approximately 3 million followers) and Hank Green's Twitter (approximately 771,000 followers). During our interviews, they mentioned wishing that there was an active Nerdfighter group nearby, but there was not. However, in the winter of 2017, they discovered the Tuataria Discord channel. As a homeschooled

student with lots of time and access to technology, they became immersed in the Tuataria Discord. Madison reported spending at least an hour or two daily and was, at the time, organizing a local meet up. They reported that the experience of a smaller, active group has “cemented [themselves] more as a Nerdfighter.”

All but one interview subject mentioned their engagement with the VlogBrother’s YouTube channel. It appears from some of the answers that many survey respondents view the community as YouTube solely. Though it was not asked in this way, several respondents referred to YouTube’s rules (you must have an account to comment), or the sometimes-contentious nature of YouTube comments sections, as a reason for not commenting. Nine of the 15 teen subjects mentioned engaging via Twitter. As noted above, both of these Nerdfighter outlets have huge numbers of subscribers.

The community experienced significant changes over the course of the study. During the eight months (January–August, 2017) when the data collection was active, the Green’s held a convention in Boston, announced and completed a scavenger hunt, developed two Discord channels, announced the publication of John Green’s first book in almost six years, and announced their first tour since 2012 (H. Green, 2015a; J. Green, 2017a, 2017c; Hill, 2017). All of this activity led to the participants feeling more excited and engaged by the community. Even within the forum I was observing, there was initially a sense that they were coming to Nerdfighteria after its heyday, followed later by tremendous excitement and a recommitment during the period of the study.

The map below (Figure 4.3) outlines the many platforms that teens participated in. These began with the VlogBrothers channel and then incorporated official Nerdfighter or John/Hank Green media such as their Twitter accounts, Tumblrs, and affiliated YouTube channels (e.g., SciShow). However, the teens who described their affiliation in the strongest terms had found their way to a smaller or more interactive community. In addition to the example of Madison, noted above, consider Claire. Claire became involved with the Nerdcon Attendees Facebook page. She and some of the other Attendees developed a Google Hangout to discuss a meet up at the Con, but then stayed in the chat so they could hang out. This quickly evolved into a regular hangout where the participants watch movies together over a Google Hangout, communicate in a Facebook Messenger group, and chat in a separate Facebook subgroup. Research Question 2 will examine which platforms are selected by Nerdfighters and how they move between these platforms.

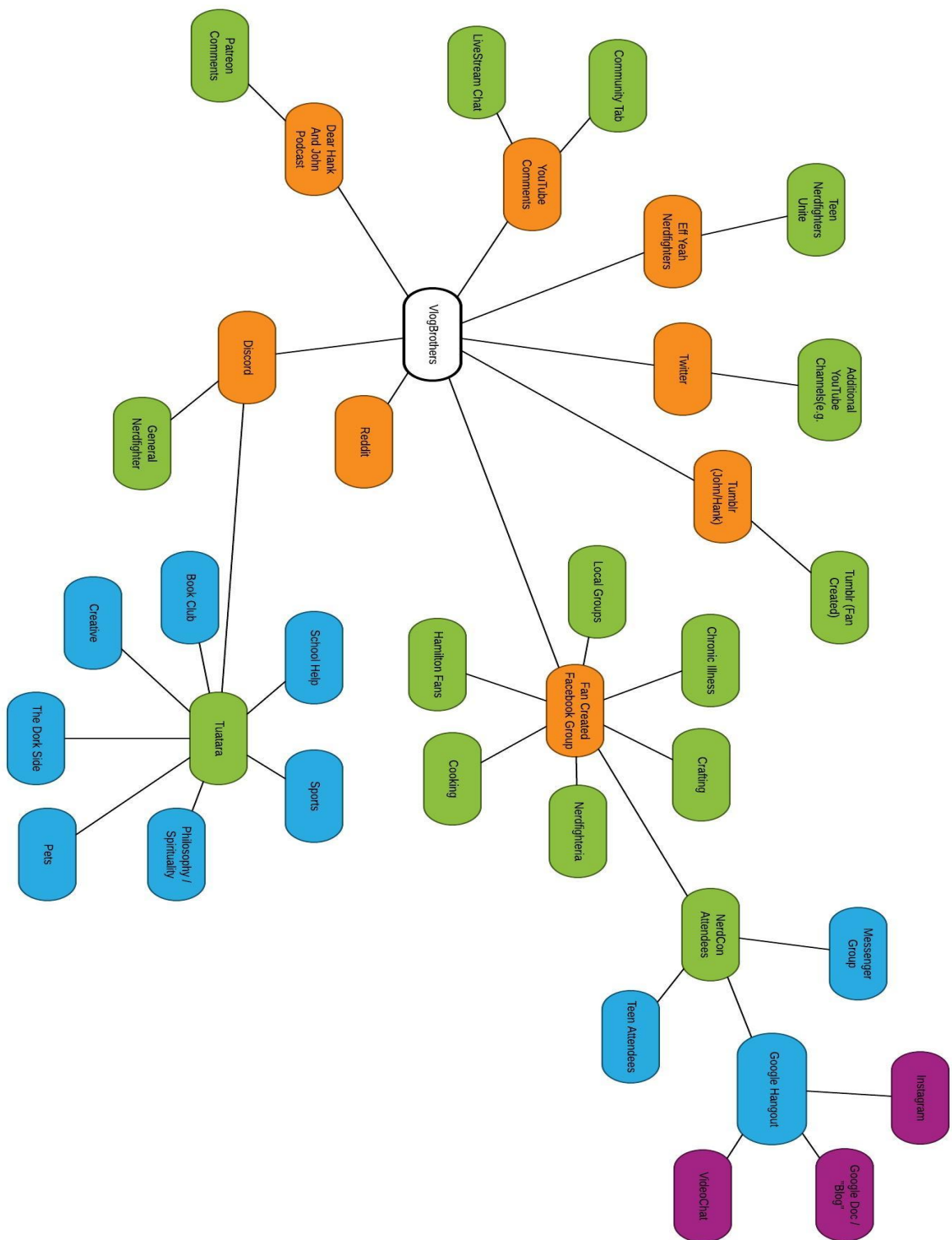


Figure 4.3. Nerdfigther platforms and sub-communities referenced by participants.

RQ1. WHAT TYPES OF EVERYDAY LIFE INFORMATION DO TEENS SEEK IN THE NERDFIGHTER ONLINE FAN COMMUNITY?

The teens in Nerdfighteria seek a wide range of information, from simply seeking out others who are experiencing similar things to seeking out specific information on a problem or concern. As noted in the literature review, the model put forth by Agosto and Hughes-Hassell (2006b) posits several “selves” that teens seek information around (see discussion of youth information practices and Figure 2.7 Maturation Tasks and Definition of Selves). In this study, the data supported the selves, with the addition of a “fan self,” where interactions and engagements did not quite fit the rest of the “selves” posited by Agosto and Hughes-Hassell. The fan self will be discussed in more detail below. Of the eight selves posited, teens in Nerdfighteria were, by far, engaged with information around the “social” self. Given the nature of observing a social media forum, this is not surprising. Table 4.1 lists the selves and the corresponding code applications drawn from the interviews, diaries, and observation of the teen forum.

Table 4.1 Survey Self Labels and Corresponding Code Application	
Label	Code Application
Social	720
Cognitive	426
Emotional	252
Fan	226
Creative	133
Reflective	120
Physical	49
Sexual	34

The next most frequently assigned code for self was the cognitive self. This fits well with what we know about this stage of life, when learning is very important, but also with the nature of the community and the time of the study. I will discuss each self in descending order of prevalence, focusing on the sub-codes, both etic and emic, and sharing examples from the data to illuminate the concepts.

SOCIAL SELF

Because the teens in this study are participating in many social media platforms, it is unsurprising that they engaged heavily in social self-practices. This self is characterized by developing peer relationships and navigating a social world (Agosto & Hughes-Hassell, 2006b; Subrahmanyam & Šmahel, 2011). The largest one, by far, is an emic code for *hanging out*, which is derived from etic codes for relationships and social activities (Agosto and Hughes-Hassell, 2006b). However, discussions of *overlapping fandoms* and the *social* aspects of the 2017 Nerdfighter Scavenger Hunt were also common. Other codes, which were common for prior research were not found. For instance, Nerdfighters exhibited no interest in fashion, except as it related to purchasing items in support of their fandom. Consequently, that aspect of fashion was coded to the new self: fan self.

Hanging out frequently consisted of checking in on the Forum, i.e., wanting to know who was online and what they were doing. Sometimes these discussions would develop in a playful direction in which they discussed their signatures or profile pictures. Sometimes these discussions would be a member returning after being absent for a while and asking for an update. Often, these socially oriented interactions were geared

toward reinforcing the group or an individual's status in the group by reassuring them of their importance to the group or by welcoming warmly new members to the group. This aspect will be explored in greater detail in the discussion of the second research question.

Other hanging out practices in the Forum included noting "holidays" such as Pi Day (March 14) and discussing the group members' activities, to share their dreams from the night before, to chat about their first memories of Nerdfighteria, and to ruminate on the affordances of the Forum. In discussions of the Forum, members noted the number of posts a person made or their location, some of which were modified by the teens to reflect their sense of humor. For example, several members were purportedly were posting from outer space.

One emic code that emerged from the data, but fits the profile of a social self, was *overlapping fandoms*. This code came to describe the experience most participants referenced of being a fan of multiple things, and the desire to engage with the Nerdfighter community around those overlapping fandoms. The most common overlapping fandom was Harry Potter, but participants also referenced *Hamilton* and other musicals, specific bands, Legos, *Sherlock*, and *Doctor Who*, among others. In fact, musical theater overall was a surprisingly common topic, either as a participant or as a fan.

Members of the Forum frequently discussed Harry Potter from a variety of perspectives, as canon text, as creators of transformative works around Harry Potter, as

a metaphor for their lives, and as a metaphor for the world. Claire describes a conversation in the Nerdcon Attendees Facebook, spinoff group chat about how Patronuses (a magical animal guardian evoked by a complex charm) might reflect the underlying character and mental health of the person. Likewise, Emma had a long discussion about feminism and the casting of a new female Doctor in *Doctor Who* on the Tuataria Discord, including seeking support for their fandom after a friend's father mocked them on Facebook for appreciating the female casting.

Like the Forum participants, the interview subjects also engaged in content creation around their multiple fandoms, including YouTube channels and creating a Harry Potter panel for the Nerdfighter Convention in February of 2017. Gemma was the initiator of the "Harry Potter and Identity" panel at NerdCon and particularly enjoyed overlapping their Harry Potter Fandom into Nerdfighteria, due in part because of the more relaxed attitude in Nerdfighteria. Gemma noted that the Harry Potter fandom, in which they were quite active, had strong, even virulent, discussions of the finer points of canon*. Nerdfighteria, in contrast, was open to multiple interpretations of the Harry Potter canon and privileged the discussion over the argument. Claire had a similar experience in a band fandom around the band Twenty-One Pilots. Emma tied their fandom of Neil Gaiman's *Good Omens* back to the mission of Nerdfighteria: "I've seen someone talking about Neil Gaiman or *Good Omens* before in literature. In a sort of a

* Canon is defined as "the events presented in the media source that provide the universe, setting, and characters" (Busse and Hellekson, 2006, p. 9).

roundabout way, *Good Omens*, it has a lot of things that Nerdfighteria really values. Like independent thought and sort of an easy respect for a lot of different things.”

Other areas of overlapping fandoms included musicals and musical theater (as noted above), including a cross-over Nerdfighter-*Hamilton* Facebook fan group, the Welcome to Night Vale podcast, and even American Girl dolls.

Finally, the third major area of social engagement was around the *scavenger hunt*. This was a descriptive emic code to track social engagement in a Nerdfighter Scavenger Hunt. In order to describe the engagement, I must first describe the scavenger hunt itself. In the winter of 2017, John Green announced a new scavenger hunt, designed to be similar to a prior scavenger hunt which had been created in 2007–2008 (J. Green, 2017b). The scavenger hunt was dedicated to solving puzzles that then unlocked a password, which allowed access to a website with hidden forums. The excitement around the scavenger hunt spurred the formation of a Discord channel. Discord is an app designed for gamers to livestream and chat about their gaming. The Discord channel for the scavenger hunt is named Tuataria, and it has numerous and changing sub-channels, created by the admins and devoted to homework help, sports, politics, and assorted other topics utterly unrelated to the scavenger hunt. The scavenger hunt was also frequently mentioned in the Forum I observed, until the members who were participating decided to move their discussion to a separate group message. Several interview participants also participated in the scavenger hunt to varying degrees, as it was quite a time consuming activity. The culmination of the

scavenger hunt was the announcement of John Green's first new book since 2012, and the first 500 people to log in with the final clue received free, signed copies. While the scavenger hunt was undoubtedly a cognitive challenge, in execution it was a social practice, as described below.

The scavenger hunt created a large uptick in social interactions, in which Nerdfighters chatted about the hunt, their reasons for doing it or not doing it, and helped each other with the clues. Within the Forum, there was discussion about the way the scavenger hunt revitalized the community overall. One participant even noted that they, at one point, felt they had come to the Nerdfightaria after its peak, but that the reengagement and revitalization made them really happy. Those in the Forum who were participating in the scavenger hunt were excited to find each other in different settings, such as the itsatuatara.com website, as well as the Tuatara Discord.

Emma, an interview participant, described the social nature of the scavenger hunt by referring to the participants as a community. "This community of intellectuals was brought together by something that was intellectually stimulating, the scavenger hunt. What various corners of the Internet are we going to go to find this weird obscure fact? It's just the general affability of everybody and the constant what new thing can be heard today that makes it work." They describe getting up at 3 a.m. to be a part of the hunt for the final clue and the end result being a message from John Green thanking them for building the Nerdfighter community and announcing his new book. Chris describes joining the Tuatara Discord after the end of the hunt and feeling a little sad

that they missed being there for the “big reveal.” Mira explains how helping each other with the scavenger hunt built connections, saying, “I was like, ‘Yeah, I don't know.’ I just connected to that person but I have no idea who they were.”

When participants in the scavenger hunt found each clue, it led them to a new discussion board on the itsatuatara.com website, where they could chat with other successful participants, further increasing the social component of the hunt and tying the Nerdfighters who worked on the hunt to each other and to the community overall. Even those who did not participate frequently in the hunt reflected on the process positively. Mira, who dipped in and out of the hunt due to time constraints, still liked to observe and felt it reflected positively on the community, even when they did not seek clues on their own. “It's really cool. I was on John's first, the video that he did the first clue on. It was really cool to go on the comments and see people working with each other and helping each other and people say, ‘Oh, yes. I finally found it.’ It was cool to see that whole comment.” Claire described how the community would help each other with the clues and create walk-throughs to help, using an open Google Doc where the writing was white on white. If you needed help with a clue, you would find that section of the Google Doc and highlight it to reveal hints and walk-throughs. The scavenger hunt was a pivotal engagement component for many study participants, whether they did the hunt or not. The existence of the hunt, the creation of the Tuatara Discord, and the positive and helpful conversations around the clues, drove social engagement within Nerdfighteria.

The final larger area of social engagement within this study was around *music* and *movies*. These are etic codes that were shared by Agosto & Hughes-Hassell, though they referred to them as “pop culture” (2006b). A surprising number of Nerdfighters, both interview participants and Forum members, are either directly involved in musical theater or fans of musical theater. Most often the discussion of musical theater was from the perspective of a fan; engagement in music and theater as an activity was mentioned occasionally. There were numerous discussions on the Forum about the relative merits of *Finding Neverland* vs. *Hamilton*. Two Forum participants engaged in long discussions about *Les Miserables* with regards to the musical’s relation to history and to the source material. Speaking about musicals generally, they discussed and debated whether someone needed to see the musical or if listening to the cast recording was enough to make you a fan. Some of these discussions led to deeper philosophical debates about whether one can appreciate the art while disliking the artist or the use to which their art has been put (e.g., Wagner and the Nazis). Following the 2016 US Presidential election, members of the Forum took solace in the fact that there would always be good music and suggested that they focus on that instead of their anxiety around the election of Donald Trump.

Movies also came up frequently in discussions, though less so than musicals. As self-proclaimed nerds, there was a lot of discussion about the latest *Star Wars* movie. Claire and Sam both participated in Google Hangouts with the Nerdfighter sub-group where the group live-streamed movies to watch together while chatting. One of the things they both enjoyed about watching movies as a group was the geographically

diverse community. They found it amusing that they needed to get up at 6 a.m. on the weekend to watch with the group because the originator was in the United Kingdom.

Other areas of social interaction included jokes and *humor*, often puns, and some discussion of television shows (largely *Sherlock* or *Dr. Who*). The Forum engaged in a brief, but lively debate about why people participated in certain technologies for social interaction, noting that there had been a move away from forums to platforms like Discord and Facebook, and discussing how they would change the YouTube community tab to make it more interactive.

Social engagement and the development of a social self within a community is at the heart of Nerdfighter online communities. The topics varied somewhat, but most often dealt with what it meant to be a community and a community member. Teen Nerdfighters frequently used shared experiences around the arts or around the community, as in the scavenger hunt, to bolster their social engagement and connections.

COGNITIVE SELF

The information needs that foster the *cognitive self* refer to the development of new cognitive capacities and demands that come with adolescence as well as the drive to understand the world (Agosto & Hughes-Hassell, 2006b; Subrahmanyam & Šmahel, 2011). In Agosto and Hughes-Hassell's (2006b) model, the cognitive self encompassed *academics, school culture, and current events*. These codes were partially found in the study group. Unsurprisingly, for a community dedicated to being a nerd, exchanging

intellectual information was quite common. As Madison puts it, “I feel like they take an intellectual standpoint instead of an emotional standpoint. I feel like it is a lot more understandable than a lot of what people say on the Internet.” The etic code, academics, was broken out into emic sub-codes, including *history* and *social sciences*, *science*, *math*, *extra-curricular activities*, and *literature and books*. School culture was not found in the study population, but current events (and *politics*, an emic code) were very common.

In addition to being a common topic, intellectual topics were of personal significance to the teens. Many referenced finding a place to discuss topics such as science and history as being a primary factor for their engagement in Nerdfighteria. The most common topic discussed was history and social sciences, though that figure is somewhat skewed by the presence of a person in the Forum who posted factoids about the “year” represented by the Forum page. Every time the Forum rolled over to a new page, they would post historical information about the corresponding year (e.g., when the Forum gets to 1929 pages, they will likely post about the stock market crash and the ensuing Great Depression). However, other participants were also interested in history and would choose to research and share their findings with other Nerdfighters. Emma recalls discovering a historical database that included love letters between John and Abigail Adams, and immediately sharing it with a fellow Nerdfighter friend over the Tuataria Discord channel.

Likewise, politics and current events were common topics of discussion. While coded separately, because they incorporated two very different streams of discussion, if viewed together they were the most prevalent sub code of cognitive self. It is important to note that data collection for this study was between October 2016 and August 2017, during the highly contested 2016 election cycle and its aftermath. The teens in the Forum were deeply engaged in politics and current events, and turned to each other for information on the election, the Electoral College, health care reform, and foreign policy. As several members of the Forum identified as LGBTQ, the outcome of the election and the subsequent turmoil were keenly felt by a vulnerable population of teens. Survey respondents also used Nerdfighteria to understand current events and politics, including changes in government policies. 27 percent of respondents said they used Nerdfighteria for information seeking by looking for information around current and world events. One survey respondent used Nerdfighter videos to talk with their parent in the run up to the election: “I've also showed my mom their political videos for the past season—because I'm not 18 until next month and can't vote.”

The interview subjects also reflected the turmoil in the country and used a variety of strategies to understand the political implications of what was happening. These strategies ranged from asking directly for information to monitoring comments on videos about current events. As Mira says, “even though I didn't necessarily have that question about Obamacare. If you ask me, what's Obamacare? I would say something vague about health or something. Because those people explained to that person about that question, I now can take that information for myself and use it.”

Literature and books came up frequently and were the fourth most common sub-code. Given that one of the founders of the community is one of the most prominent current young adult authors, this is not a surprise. However, the teens who discussed books or asked for advice on what to read next were rarely discussing John Green's work. They engaged in lengthy back and forth conversations about favorite texts and writers (beyond John Green) in the Forum. Related to the discussion of current events, one Forum participant noted that books and music would help them through a period of national political turmoil. There was no consensus around authors or genres, with suggestions ranging from *Star Wars* novels to Agatha Christie, and Victor Hugo to children's literature from their younger days.

One interview participant, Claire, was loosely involved with a book club, which came out of her Facebook attendees group from NerdCon. Similarly, Emma enjoyed a book club that was a part of the Tuataria (scavenger hunt) Discord channel, but which also encompassed general book discussion. Both Riley and Gabriella particularly valued the Crash Course World Literature series for exposing them to new titles, and for getting John Green's impressions of the texts.

Other participants valued their sub communities as a way to share their writing with a friendly, but critical, group. One Forum member even created a literary magazine for Nerdfighters, in which other Forum members could participate and share their writing.

Science was a common topic of information engagement. Due to the popularity of SciShow, many of the teens who participated in this study were deeply interested in science as a topic, generally. Seven of the 15 interview subjects referred to science. For example, Gabriella talked about searching for chemistry and biology videos out of personal interest in the topics, and Isabelle was interested in learning about the origin of computer programming languages. Science topics also came up frequently in the six-month observation of the Forum. In my observation of the homework help section of the Tuataria Discord, science and math topics were a frequent topic of discussion, much more than other areas of homework support. Says Lia: "I want to be an engineer and everything. Finding a channel that is just about that, I was so excited. I'm like, 'Yes! And it has Hank in it!' That's kind of how I started, and I became a Nerdfighter maybe three or four years ago." Isabelle watched the CrashCourse videos on computer programming because they were unsatisfied with how they was taught programming in school. "I already know a little bit of the computer languages, like Java and C++, things like that, but I really want to get more background, too. We don't really talk about the history of it. We just learn it, learn how to do it. Just getting what's behind all of that is interesting to me." Mira likes to monitor the Science sub-channel of the Tuataria Discord App for interesting tidbits and conversations and will occasionally search it for a specific topic.

Other sub-codes for cognitive self included *extra-curricular activities*, *studying*, *math*, and *weather phenomenon*, which was coded separately due to its prominence. Forum members in particular enjoyed discussions of the weather where they lived and the science underpinning weather phenomenon. Given that the Forum members were

scattered around the country (note, I removed from review any Forum members who were clearly in a foreign country—these included participants in Nigeria and Japan, among other locations), it is likely that these weather discussions served a dual purpose of bonding the community together. Examples of extra-curricular activities included seeking advice on debate team, and detailing participation in theater and vocal training.

The cognitive self and its associated practices were hugely important to teen Nerdfighters on many levels. They frequently defined themselves in terms of their intellectual engagement. They consistently referenced the importance of intellectualism to Nerdfighteria as a primary motive for their participation. Finally, they counted on both the content created by John and Hank Green's numerous YouTube channels, as well as the content shared in the comments by fellow Nerdfighters, as very important to their lives personally and for their schooling.

EMOTIONAL SELF

Agosto and Hughes-Hassell (2006b) define the development of the *emotional self* and the associated information needs for reaching maturity and establishing independence from family as developing emotional maturity and establishing mature and independent relationships with family and others. Typical topics of information need for the emotional self include *family, emotional health and support, and religion*. This particular coding scheme is entirely etic. No new codes emerged from the data.

The most common sub-code for emotional self was emotional support. Teens turned to their Nerdfighter community to give and receive support when they were

down, and they valued the contributions of their friends to their well-being. The Forum had several exchanges where teens turned to each other to share their concerns and to offer support. In one notable period, the members were commiserating about their disappointment in the 2016 U.S. election results. One member who identifies as transgender, was particularly devastated. The other members rallied to their side with sympathy and with indignation that anyone would consider their friend to be lesser. Another member was saddened to discover that a separate fan message board for a different fan community was being shut down. He noted that it felt odd to mourn a website, but the other teens on the Forum assured him that they understood and that what he was actually mourning was a community. Other times the support came for accomplishments rather than losses. Members shared their achievements, such as creating a YouTube channel, writing a short story, or making it onto a competitive school activity. A decision of whether or not to participate in Nerdfighter activities such as Project for Awesome (P4A) came up frequently. The responses were always encouraging, even to the point of suggesting that if a member was not ready to do it this year, they could do the following or could work with someone in the future. Sometimes members turned to each other for support in rites of passage to adulthood, such as taking standardized tests, getting driver's licenses, or minor medical procedures. Other members of the Forum would then share their experiences and reassure the sharer. When someone stepped away from the Forum and returned, they were uniformly welcomed back with eagerness and support.

Twelve of the 15 interview participants referenced the emotional support they got and gave through Nerdfighteria. Chris thought that Nerdfighteria helped to reach a greater understanding of who they were: “It was really good that I found it the summer after eighth grade, because at that point I was kind of struggling with just growing up. Figuring out how to just be a person. It helps me with accepting that I can be myself and also have fun.” Gemma had a similar experience in finding Nerdfighteria during a rough patch in 7th grade. In addition to seeking support, Emma valued giving support to others: “I think Tuataria is sort of become a really safe place for people where they can talk about their problems and people will be there to give emotional support. There have been a couple of times where someone was having a rough time and I feel that maybe I was able to help a little bit.” Tyler did not often engage directly in Nerdfighteria; they tended to prefer to observe. But Tyler did note that they liked the times they could give support to another person. “I guess because I found the safety and security that I really want to find....I try to be as nice to other people as I can, because they all deserve the love and support.” Sam used their NerdCon Google Hangout as an emotional support network, noting that they could just call out to each other when they had had a bad day and other group members would be there.

Issues around family also came up, though not as frequently. There was one member of the Forum whose family shared different values, which was a considerable source of stress for her. When a friend on the Forum reminded her that she would one day be out on her own, she was grateful and noted that that future time was something

she thought about constantly. In other cases, some members were coming to terms with illnesses in their families.

Mental health was a concern for some of the Forum members. In particular, one Forum participant stepped in and out as their anxiety dictated. An interview participant noted that they became overwhelmed by too much social interaction and would sometimes choose to step away from technology to recharge. Others came to their Nerdfighter community to share their mental health struggles. One Forum member wrote about their anxiety and depression after the election and to share their validation when they called a representative to express their views on issues. At other times Forum members and interview participants talked about how John Green's recent openness with his OCD and depression helped them understand mental health better. Riley felt that this openness translated into a more compassionate community overall.

Religion came up occasionally. The Forum member who had different values from her family was frustrated that their religious convictions meant that she could not celebrate Halloween or publically share her love of Harry Potter. Within the interview participants, there were differing understandings of how religion was seen in Nerdfighteria. Gabriella thought the community was welcoming and engaged in discourse rather than arguing. Chris on the other hand, was conflicted in their perception of religion in Nerdfighteria. As a practicing Mormon, Chris often felt that they were responsible for explaining their faith to a larger audience that had a skeptical view of religion overall and Mormonism in particular. "Sometimes I don't feel

comfortable talking about very specifically my beliefs. I often try to avoid bring up that I'm LDS because that sparks controversy. Sometimes, I don't know.” Chris goes on to say that they would rather bring up their religion in Nerdfighteria than elsewhere on the Internet, noting that the community is making an effort to be civil and have an honest conversation.

The emotional support gleaned through participation in various and diverse Nerdfighter platforms was very important to study participants. Within the Forum, members referenced their appreciation for the support of other Forum members. Interview participants turned to a wide variety of platforms, from Facebook groups to Google Hangouts and the Tuataria Discord, for emotional support and to engage in discussions around religion, mental health, and family.

FAN SELF

Fan self is an emic code that emerged through the study of this community. In Agosto and Hughes-Hassell's (2006b) empirical model of urban teen's ELIS needs, there were several areas that might touch on the experience of a fan. For example, the social self includes information needs around popular culture (Agosto & Hughes-Hassell, 2006b, p. 1419). However, the examples given do not rise to the level of a fandom.

Agosto and Hughes-Hassell (2006a & 2006b) derived the initial seven selves as independent variables from their data and from developmental research. Each self refers to “a subset of an adolescent's growing understanding of himself or herself and of the world in which he or she lives” (2006a, p. 1399). The importance of Nerdfighteria to

the study participants warrants a separate category as a self. Teen participants referred to Nerdfighteria as a part of their identity. They were observed to dream about Nerdfighteria, for example.

The *fan self* code and sub-codes are entirely emic and descriptive of the teens' experiences. The largest code was *Nerdfighteria*, which was used when teens described their experience or sought to learn more about the community overall. Participants in the Forum were surprisingly self-reflective. There were numerous conversations about what it meant to be a part of the community, where the community was headed, and how they first discovered Nerdfighteria. Often, this meant sharing what the support of the community means to them or why they are proud to be a Nerdfighter. Sometimes this pride was driven by the actions of the community in a project such as Project for Awesome, and sometimes it was driven by the sense that they are a part of a unique and loving community.

As an example, The Road to Nerdfighteria is a video project dedicated to reflections on how people became Nerdfighters. Numerous teens shared their experiences there, which mirrored the experience of Forum members. Likewise, interview and diary participants thought quite a bit about their experience in the community and what it meant. Mira noted that though they were a frequent part of other commentary online (specifically ESPN), Nerdfighteria felt like a part of their identity. Ash reflected that Nerdfighteria was built around inclusivity, which was an important component in their participation. Emma was proud to be a part of a

community that was experiencing “a renaissance.” Teens in the Forum reported frequently dreaming about Nerdfighteria. There were numerous entry points, whether the finding VlogBrother’s video channel, reading books by John Green, or being assigned SciShow or Crash Course by a teacher. As they evolved as Nerdfighters, they shared their projects related to the community, including many YouTube channels, participation in the Project for Awesome, and the creation of a fan zine.

The participants in this study did talk about and share information about the object of their fandom, but less than I expected. Most often, it took the form of discussing the latest video or sharing their excitement around the publication of John Green’s first book in a long while, *Turtles All the Way Down*. Sometimes this involved sharing personal interactions with one of the Green brothers, for example “liking” a social media post, or in the case of Jeff, a Twitter exchange with Hank about the location of an event. For those that participated in the scavenger hunt, seeing John’s message at the conclusion was very important to their experience as a fan. While it was not personalized, it felt personal and meaningful to the participants. Emma described it as a “lovely message.” In both the Forum and with the interview participants, often this topic took the form of discussing fan related merchandise. Riley was proud to share that they possessed several signed posters. In general, anything that was interactive in some way with the Green brothers was very significant to the participants. Mira mentioned a VlogBrothers video in which Hank Green had montaged images from Amsterdam

submitted by Nerdfighters. Both Sam and Claire mentioned sending Hank 378* of an item, which is a Nerdfighter inside joke. Sam was planning on sending Hank 378 covers of a song and Claire sent Hank 378 of a particular candy. Their selection of the item itself was an inside joke signifying their participation in Nerdfighteria. Of the 69 survey respondents who use the Nerdfighter community for information seeking, 13 percent sought fan-related information, often around events within the community such as meet ups.

The last sub-code for fan self is *service to fandom*. A surprising number of participants engaged in activities to help and support the fandom overall. Several members of the Forum collaborated with others on a fan zine, which has been produced on a semi-regular basis and contains stories about members' experiences in the community or discovery of the community, fiction and poetry, as well as fan art. Notably, the fan zine was a rare example of fan works related to the Nerdfighter community. Other people offered to bring Forum members to NerdCon virtually by carrying life size images of participants and taking fan photos with people they met there. Forum members were thoughtful and thankful to their admins for keeping the Forum spam-free. Both Forum members and interview and diary participants referenced an ongoing project called The Road to Nerdfighteria, in which Nerdfighters create and share their origin stories as videos, which are posted to Tumblr and to YouTube. Some

* The number 378 refers to an inside joke from the NerdCon convention. A vendor sent 378 key chains to Hank Green to distribute. The oddness of the number became an inside joke in which fans would send Hank Green 378 of an item. The item should also be part of an inside joke, in the case of Claire, she sent 378 O'Ryan's Potato Candy. The name Ryan is also an inside joke referring to the podcast.

have created videos and some have assisted with the promotion and management of the project overall. Forum members contributed to the Nerdfighter wiki when a new event happened in Nerdfighteria. Sam referenced creating a Dropbox to share video and images from Nerdcon with other attendees who were looking for pictures.

Through examining these codes, what comes through is that Nerdfighters' identities are deeply wrapped up in their community and the information they create, share, and seek throughout it. Whether it is their experience in the community that they are seeking to validate or discuss, their experience as a fan, or their service to the fandom overall, their fan self is an important piece of who they are.

CREATIVE SELF

Creative self is defined by Agosto and Hughes-Hassell (2006b) as incorporating both creation and consumption of creative works. However, given their inclusion of popular culture in social self, and the increasingly blurred lines between creative content and creation, I have taken a narrower view and coded creative self to focus more on creation. The lone exception was one survey respondent who searched Nerdfighter communities for Nerdfighter related art. The two sub-codes for creative self were *hobbies* and *side projects*. Hobbies are the traditional hobby type activities that were ongoing and often craft or DIY oriented—cooking, crafting, drawing. Side projects were specifically time limited and project-based: creative activities such as making a video, the aforementioned fan zine, or a theater production. In contrast to previous research (Agosto & Hughes-Hassell, 2006b), teen Nerdfighters were somewhat active with content creation.

As noted earlier, many Nerdfighters are involved in theater in some way; several had YouTube channels for creative content they created with fellow Nerdfighters, including a Harry Potter fanfic video series; or they used their Nerdfighter communities to participate in hobbies such as crafting or cooking. The Nerdfighter-based Harry Potter fanfic YouTube channel involved multiple people creating stories from the era of the Wizard Wars (Harry's parent's generation) and incorporating Vlogs as a part of the story. Nerdfighters in the Forum used their friendships to share and garner feedback on creative writing projects using either a Google Doc or Dropbox to share the content. Both members of the Forum and interview participants created videos in support of Project for Awesome to garner support for their favorite charities. Most Nerdfighters used their community to either share a project for feedback, ask for advice on something related to the creation of content, or hang out in a community of similarly minded creators. For example, Gemma described their experience with sharing their creative writing: "If I need feedback on something, there are people who will take time out of their schedule to go read and try and figure out more about something. You can always have people that will give their time up to help." Rebecca is an artist and cook who participated in Nerdfighter Facebook groups around both hobbies. When asked why she used Nerdfighteria to discuss her creative activities, Rebecca shared that she liked being able to provide help, citing an example in her crafting group where she advised a fellow Nerdfighter on how to mix paints.

Creativity and the creative self were seen in Nerdfighteria, but were not as common as earlier categories. Those who did engage in creative endeavors with

Nerdfighteria, however, greatly appreciated the nature of the community and the ability to get useful and positive feedback with a wide-ranging group of people.

REFLECTIVE SELF

The *reflective self* encompasses a developing *identity, future goals, values, civic duty,* and a *cultural identity* (Agosto & Hughes-Hassell, 2006b). While an argument could be made that current events and politics fit this self, as it is related to civic duty, my interpretation of the Nerdfighters' engagement around politics and current events was focused both on issues and making sense of the world in a fractious time; thus, it belonged in cognitive self. The sub-codes for reflective self only partially matched the ELIS needs of urban teens. Similar codes were *college* and *future goals* and what I termed *identity*, but what Agosto and Hughes-Hassell call *self-actualization* (Agosto & Hughes-Hassell, 2006b). I found quite a bit of discussion around *charity* (i.e., Project for Awesome and other charitable endeavors), which could be considered an overlap with civic duty, however, given the prevalence and importance of charity to the participants it warranted an independent code.

Considerable participation in charitable endeavors, in most teen contexts, might be considered a surprising finding. However, the prominence of Project for Awesome and the sense created among the participants that charitable pursuits were part of a Nerdfighter's identity, meant that this code was more common than I predicted. Project for Awesome is a very large annual fundraiser and happened during the data collection phase of the study. Likewise, the escalating international refugee crisis prompted reflection on the part of Nerdfighters.

The Syrian refugee crisis of 2016–2017 came up several times. One participant, Mira, decided to donate their gift card to a refugee charity in their community. Chris participated with their Nerdfighter friends in a fundraiser that donated money based on the number of tabs open on your computer, and Rebecca reflected that the message from John and Hank was to be engaged in community service. Many interviewees and Forum members participated in Project for Awesome either by creating videos for charities they cared about or by using their Nerdfighter platforms to advocate for the charities they cared about.

Given the age under observation, discussion of college and future goals was a common theme, primarily in the Forum. Members of the Forum shared where they were considering applying, what they were looking for in a school, and thoughts on the application process. These posts were in turn given advice, information and support, including insider information from people who happened to live near one of the colleges under discussion. Future goals other than college were discussed less frequently. Topics of future goals included marking milestones like learning to drive, whether to pursue an artistic vocation and, in the case of Gemma, a general conversation with their Nerdfighter friends about what they might do in the future.

The discussion of identity and what constituted a Nerdfighter came up, but relatively rarely. In the Forum, discussions around identity revolved around the importance of a Nerdfighter identity to the members—these ranged from the silly (can Nerdfighteria be considered a country?) to the serious (how becoming a Nerdfighter

positively impacted their life). No one referenced a Nerdfighter identity as anything other than positive. Questions of identity were less prevalent in the interview and diaries, though they did come up. Chris talked about how being a Nerdfighter helped during a difficult period of middle school. Chris also described sending in a question to the Dear Hank and John podcast asking for advice about how to broaden their identity with people who known them for years as the “music girl.” Mira likened being a Nerdfighter to having a specific identity, rather than just being in a community.

As noted in the discussion of the survey demographics earlier, gender and sexual identity is a complex topic among Nerdfighters. I have included discussion of the findings around sexuality in the discussion of a sexual self. Sam worked with a fellow friend from their NerdCon attendees group to create a flyer on gender identity and an infographic on pronoun usage (in the identity sense, not the grammatical sense). Sam felt that their Nerdfighteria group was the right place to handle their gender identity project, because the community has a lot of exposure to identity issues and a “drive to make a difference.” Their home community in a rural New Hampshire town had less exposure to gender fluidity:

It's just secluded to the point where, for the few...and this is part of the reason I really like the project, is it's really hard to come out. Especially for some people. I don't mean to say it's not hard to be like certain things, but when you come out as gay or lesbian, people know what that means. Even trans to some extent. People have heard that. They know what it means. If I go, "I'm gender fluid," I'm just going to get looks like, "What the fuck?" Yeah. That's not going to go over well. It's like, "OK, I can't..." Therefore, I want to create materials that help people who are in situations like me...Even though I have friends, like two of my closest friends, one was non-binary and the other was androgynous. I could have

contacted them, but at the same time, they're not the same type of friends as my Nerdfighter friends are.

Establishing identity, considering one's future and their place in the world, and the corresponding self-reflection, are key developmental tasks for adolescents. While this self was not the most actively observed in Nerdfighteria, it is nonetheless a critical one. The data collected supports the finding of teens engaging in information practices to foster their maturation.

PHYSICAL SELF

The *physical self* includes topics related to *health* and *well-being*, as well as the daily tasks that are a part of living. Unlike Agosto and Hughes-Hassell (2006b), *safety* was not a topic of consideration for the participants or the members of the Forum. The primary concern was health, for themselves and the people they cared about. Rebecca, an interview and diary participant, was the survivor of a traumatic brain injury and used a Nerdfighter chronic illness subgroup to discuss her progress, ask for advice, and provide advice in turn. She appreciated the real-world advice from fellow teens, "It's other people who are also going through something similar so it's much different than asking your doctor for advice on something. It's more like 'Well, I've tried this and it worked for me. Maybe you can try that, too.'" Rebecca even notes that she asked for feedback on specific doctors. Within the Forum, the topics of health tended to be more typically adolescent—seeking advice on having wisdom teeth removed or braces put on, for example, or reflecting on the illness of a family member. Others noted the example set by Hank Green in sharing his diagnosis and struggle with ulcerative colitis. Mira noted

that the comments on the VlogBrothers videos about Hank's condition were very useful to understanding the health condition and how it impacted people.

Though *appearance* is a sub-code for physical self, it was only brought up once by an interview participant. In this discussion, Tyler (who went by two names, one traditionally female and one traditionally male) explained how they were considering cutting their hair, turned to their Nerdfighter community for advice, and sent before and after photos. When asked why they turned to Nerdfighteria for this advice they responded:

I like to believe that a lot of people in the community are really honest and stuff. Their opinion, though I don't know these people in real life, is just as important as people I do know in real life. Not in a weird way, but I feel it gave me the confidence I needed. I trust the group a lot....I guess because I found the safety and security that I really want to find. By joining the group from day one, I haven't felt excluded from it. I've felt welcomed and accepted regardless of anything. I think the sense of security is what's been nice, and safety.

While the physical self is not an especially common code for the Nerdfighter teens, when it did come up, it was particularly salient to the teen who raised it.

SEXUAL SELF

Sexual self is tied up in the developing understanding of oneself as a sexual being, the sexual identity one maintains, and one's experience of sexual safety or violence (Agosto & Hughes-Hassell, 2006b). Though not mentioned in Agosto and Hughes-Hassell's (2006b) discussion of sexual self, gender identity is also a component here. It does seem as though there has been a seismic shift in the discussion around gender in the intervening decade. The discussion of sexual and gender identity is tied up in both the

reflective self, in which we discussed identity, and the sexual self, discussed here. Sexual violence and safety did not come up as a topic either in the Forum or in the interviews. Discussions around LGBTQ identities were infrequent, but seemed valued by the participants. Following the 2016 presidential election, a Forum member who, in context appears to be transgender, expressed fear and depression to the Forum and was answered with love and support. This participant was involved in creating a summer camp for non-binary and transgender kids in their community, something the Forum recognized with support and affirmations. Interview participants leveraged their Nerdfighter platforms to discuss and advocate for their sexual and gender identities. Ash, for example, was active in a Tuataria Discord LGBTQ sub-channel, using it for general discussions and support. Tyler, as noted above, worked with a fellow Nerdfighter to educate their broader communities and other Nerdfighters on non-binary genders and on the importance of pronoun choice. Sexual acts only came up briefly, and in the context of the prevalence of math PSAT answers that were 69.

Sex and sexuality were not common codes in this study. While we know that these are important topics to teens, either they were less important to this population, or, as I suspect, they were not as frequently discussed in the venue of an open forum or with a researcher.

RQ1 SUMMARY

The teens in this study engaged with the Nerdfighter community on a wide variety of topics. Based on my observations, there were 483 instances of ELIS practices in the six months in which the Forum was observed. All of the interview participants used the

Nerdfighter community for ELIS practices in some way. Many survey participants describe ELIS practices within Nerdfighteria. The primary information engagements were around social, cognitive, fan and emotional needs, though all other selves were present to some degree.

Teens in Nerdfighteria emphasized social self, though this was prevalent when viewed through different data collection sources, which raises important methodological questions when conducting this type of research. Cognitive self was quite prominent, likely due to the fact that participants were attending school and because of the self-proclaimed nerdiness of Nerdfighteria. Emotional self, especially in the form of giving and seeking emotional support, was common. A new self, the fan self, was almost as common as emotional self. The fan self places emphasis on the important role this fan community plays in the lives of the participants, a role that has not been previously understood. Less common codes included creative, reflective, physical, and sexual, though all were present. Creative self frequently involved sharing creative works with the Nerdfighter community to illicit feedback, though the work was rarely fan oriented. Reflective self did not fully match the ELIS needs of urban teens (Agosto & Hughes-Hassell, 2006b), with a greater emphasis placed on charity and future goals, though identity was present as well. Identity tended to overlap with sexual self, as the identity discussed was often gender and sexual identity. Physical self focused mostly on health and, to a limited extent, appearance. Though these codes were not common, for the interview participants who referenced them, they were very important. Finally, sexual self was a rare code and most often occurred with regards to sexual and gender

identity. Taken as a whole, teen Nerdfighters are deeply engaged in social, cognitive, emotional, and fan practices, however some of the less common selves, such as physical and sexual, had deep, personal meaning for the teens who exhibited them.

RQ2. WHAT METHODS DO TEENS IN THE NERDFIGHTER ONLINE FAN COMMUNITY USE TO ANSWER EVERYDAY INFORMATION NEEDS?

Teen participants used several methods to explore their information needs. This section will examine the data in terms of kinds of engagement, strategies to meet needs, and the platforms chosen. Teen participants referenced a wide range of platforms in which they participated or observed. They moved fluidly between these platforms, driven primarily by the sub-communities of Nerdfighteria engaged therein. Their experiences within the platforms, however, was very different given the affordances of the platform and, at times, the sub-community. In interviews and the diary study, teens described a range of engagement with their preferred platforms, from lurking to questioning, as well as their rationale for choosing the engagement practice they did, much of which was aligned with the typology developed by Amichai-Hamburger et al. (2016) (see Figure 2.8 on page 30 for description). However, their engagement was more complex than the binary distinction of lurking and not lurking. I refined and expanded the typology to reflect this complexity. Finally, both interview and diary participants, and the Forum members that I observed, exhibited a range of practices for information engagement, which largely fit the model as described by McKenzie (2003) (see Figure 2.6 on page 23 for description), again, with refinements to encompass information sharing as well as seeking and the occasional desire to “opt out.”

I will begin the discussion of RQ2 with a brief discussion of the platforms used by participants or observed in the Forum. Next, I will discuss teen engagement practices, from lurking to questioning or providing information, with an eye to the teen's rationale for their practice. Finally, I will discuss their strategies for exchanging information, both from the point of view of fan-oriented information and from the perspective of approaches to meeting their information needs.

PLATFORMS

As I have described in detail, Nerdfighteria sprawls across the Internet in virtually every platform I have examined for this study. There are numerous Nerdfighter-oriented platforms on everything from Tumblr to Deviant Art. For the purposes of understanding the scope of Nerdfighteria and the information practices of the teens in this study, I asked them about their Nerdfighter sub-communities and engagement patterns. Based on the findings from the pilot study, I had expected Tumblr to figure prominently, but it did not. The map below reflects the 37 platforms mentioned by the survey and interview participants (Figure 4.4). As an example of how fast the platforms evolve, several did not exist as Nerdfighter sub-communities at the beginning of this research. It is important to note that for the clarity of the image, all the additional VlogBrothers' affiliated channels (i.e., SciShow, Crash Course, 100 Days) are grouped into a single category—*additional YouTube Channels*. Had those been separated out, we would have seen SciShow, CrashCourse, etc., all with separate nodes and sub-nodes for comments and livestreams.

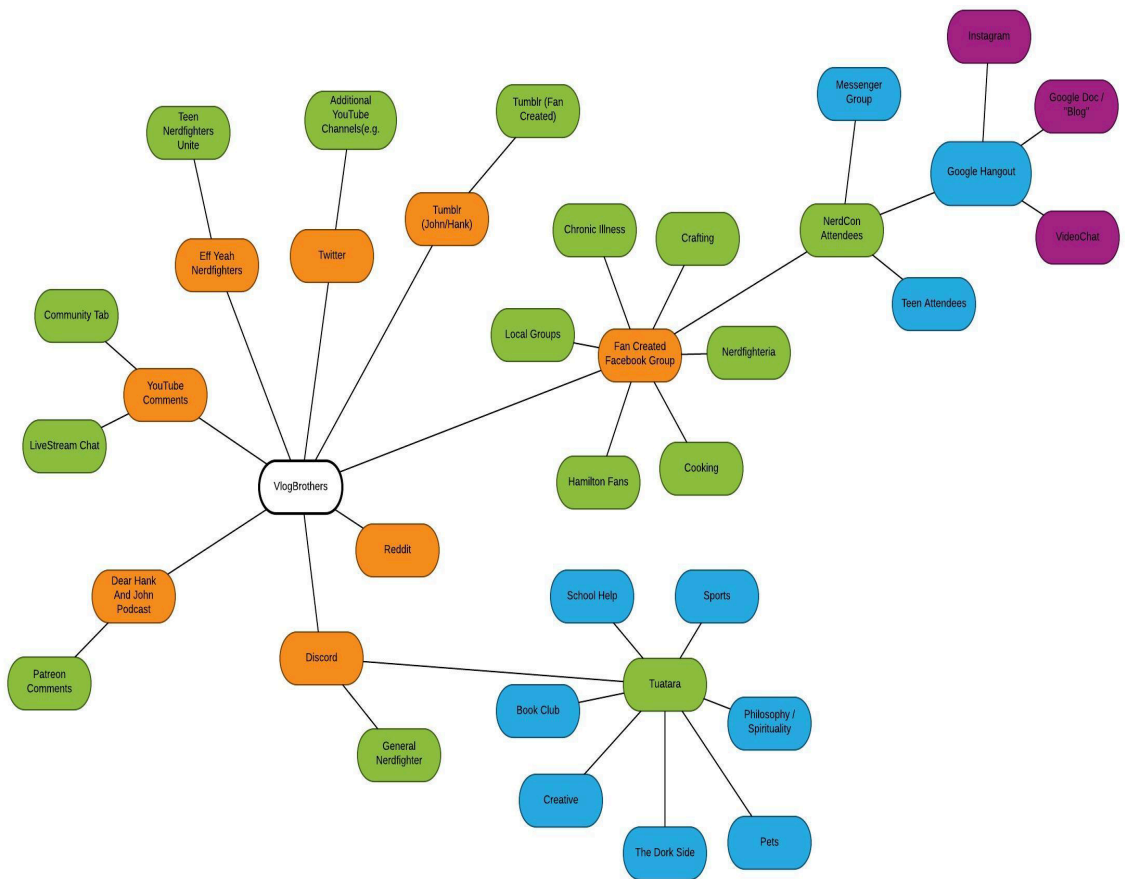


Figure 4.4. Nerdfighter platforms and subcommunities referenced by participants.

The above map begins with the VlogBrothers as the central node, and different platforms radiate out based on the degree of separation from the original VlogBrothers content. Each participant had a different experience in the Nerdfighter community and a different engagement pattern as a result. Some were engaged in many different platforms within the same sub-community. Others were focused deeply into a few platforms. This analysis emphasizes the important role that the sub-community plays in a teen’s information engagement.

ENGAGEMENT PRACTICES

As noted in the literature review, there are varying rates of lurking in online communities and no single definition of a lurker. In order to examine the engagement practices of teen Nerdfighters, the survey and interviews included questions about the engagement practices of participants. 62 percent of survey respondents reported that they comment in a Nerdfighter community “rarely” or “never.” By the definition of this study, that would qualify 62 percent as lurkers. Many of the interview participants also preferred to lurk. When asked why they choose not to comment, responses included a skepticism toward commenting in online communities generally and YouTube in particular, a sense that they do not have anything of value to add, a self-description as shy or lurking, and a preference for observation. Within those who see themselves as lurkers, there were some who felt overwhelmed by the size of the group, the prominence of certain members, or their relative youth compared to other members.

With regard to the survey data, this was one area where the predominance of Twitter users, thanks to the Hank Green retweet, may have come into play. Had a greater proportion of the survey respondents come from the myriad smaller communities, it is possible that the perspective on lurking might be somewhat different. I will parse that distinction, below, when I analyze the interview participants’ perspectives on lurking. The survey respondents had several interesting comments on why they choose to lurk, rather than comment:

- I'm a very shy person and I am afraid that people will dislike whatever I said.
- I am underage and not particularly inclined to comment...

- I think most people tend to comment rashly and without enough thought, and I don't want to say something or incite conflict I'd later regret.
- A combination of a few reasons 1) When I have commented, I have not received a response; 2) I rarely feel that I have something to say; 3) I often watch videos while doing other things, like driving, putting on makeup, etc. and don't have time to pause and comment.
- Honestly, I don't want to participate in an online community when people I know in real life can see it.

The observations and interviews generally held with the typology proposed by Amichai-Hamburger, et al. (2016), though for the purposes of this study this typology was expanded to consider a range of engagement from lurking to direct engagement via posting, which I termed *continuum of engagement*. In addition to the eleven sub-types, which formed initial etic codes for this stage of coding, I found two additional emic codes, the *need for knowledge*, and the *social capital of respondent/respondee*. Need for knowledge represented the idea that, in this community of people motivated by intellectual pursuits, the desire to learn information could be the motivating factor for engagement in one who otherwise might elect to observe. Secondly, an individual's perception of their social capital or the social capital of their respondent, would be highly motivating to engagement or observation. For the purposes of this emic code, I am drawing from Ellison, Steinfield, and Lampe's (2007) discussion of social capital online, in which they broadly define social capital as the "resources accumulated

through the relationships among people” (p. 1145) and link social capital to the ability to mobilize community action.

For those teens who received some sort of a response from one of the Green brothers, it was generally highly motivating to continue engaging. Unlike Amichai-Hamburger (2016), I did not observe personality to be a key indicator of engagement, with one exception: a teen interview participant noted that they reduced their engagement occasionally because as an introvert they needed time to recharge. Finally, through my observations and discussions with interview participants, I have come to view those who choose not to post as more “observers,” rather than lurkers, due to all the negative connotations of that term. Participants in this study were very much engaged and committed; they were not hiding. Instead, they were merely watching. The subsequent section, Strategies for Information Practices, will examine the many strategies to meet an information need which do not entail direct interaction.

Community Type

The most common sub-code for this continuum of engagement was the etic code, *community type*. In Amichai-Hamburger, et al.’s (2016) typology, this referred to the type of response expected from the community and the impact it would have on a person’s decision to lurk or not. Given the broader stance taken on this typology, community type refers to the expectation of the participant about how the Nerdfighter community approaches engagement. This question and the kind of response expected will be dealt with in detail in response to the third research question; however, participants generally expected to receive a positive, respectful response to posts.

Rebecca described the community as positive and one where she expected to be treated well, which encouraged her to be comfortable engaging in everything from sharing her art in a craft group to discussing her medical needs in a chronic illness group. Participants observed this kind of behavior throughout Nerdfighteria, and this behavior increased their sense that they could turn to Nerdfighteria with their information needs.

This code was tightly tied to the codes associated with the third research question: Why do teens choose to obtain everyday information via the Nerdfighter online community rather than another community or another information source? For example, community type overlapped with *respect* 30 times, and with “*Different from the Rest of the Internet*” 25 times. This suggests that the participants’ perceptions of the nature of Nerdfighteria is related to the engagement levels of its participants.

Needs Gratification

The second most prevalent code was *needs gratification*. This etic code refers to the social and emotional needs of the participant. In the context of the Forum, this most frequently referred to posts that were designed to garner engagement, such as questions about what other people were doing and how people were feeling. It is worth noting that since the Forum was observed and the participants were not prompted by me to think about or reflect on their interactions, only interactions that took place can be analyzed. Should someone observe and decide not to post, that could not be noted in the context of the Forum. However, interview and diary participants also engaged in needs gratification, both through observation and through engagement. For example, Claire watched an open mic live stream, which was purely social and came out of her

participation with the NerdCon attendees. She did not want to perform herself, but she was seeking an opportunity to be with other Nerdfighters. At other times, Claire engaged socially in chats or other social and emotional interactions.

Technical Design

The ethic code, *technical design*, was surprisingly common in participants' decision process with regards to engagement. Both in observed discussions on the Forum and in interviews and diaries, participants were keenly aware of the affordances of different platforms and the degree to which it fostered or hindered engagement. Some teens found the YouTube comments overwhelming and declined to post there as a result, but they still enjoyed observing the comments section. Others found the friendly design of the Discord to be a motivating factor in engagement. Emma describes Discord as follows: "I think the layout really helps because whoever designed this, they're pretty genius. It's got voice channels where people want to actually talk. They can also type if they want. There's DMs for people who want to have private conversations."

The ability to converse easily in a multitude of ways fosters the members' decisions to participate. Emma even describes using emoji responses to vote on the Tuataria Discord Book Club selections. Users would post their selections and others voted by putting emojis on the selections they liked. On the other side, participants in the Forum were quite loyal, but recognized that Forums were no longer the preferred method of hanging out online. While there was a vibrant community, far fewer people engaged regularly than those who engaged on the Discords, though the Discords were intended for all ages and the Forum observed in this research was intended for teens

only. One of the Forum members even noted that Nerdfighteria was quite spread out and wished that there was a more central way to engage.

Emma preferred to engage with Nerdfighteria via the Discord because they knew they could control the topics they engaged with, unlike Twitter, noting that you could select the channel that interested you and avoid the ones that did not, such as politics in their case. They described this as “harmony within the Discord.” In fact, Emma noted that they were using the Discord more, and the Forum less, for this exact reason. Similarly, Sam described engaging via Snapchat because of the affordances offered. They enjoyed the short clips from fellow Nerdfighters and the ability to include things like location and temperature seamlessly in their snap. Isabelle, who engages primarily through YouTube, likes Nerdfighteria because they find the interface simple, unlike other platforms. Various affordances and technical aspects of Nerdfighter platforms were quite influential in the degree and type of engagement. With the wide dispersion of Nerdfighter platforms, however, teens who wanted more engagement were usually able to find a platform that met their needs, whether to observe a fast-moving discussion, or to engage deeply with a handful of fellow teens.

Other Types of Engagement

The remaining codes were much less frequently noted. Several people noted the *response to delurking* or engaged in positive responses to delurking, which the typology links to the increased likelihood that people will continue to delurk. Response to delurking is an etic code which described how users observe other responses to delurking and the impact that can have on the choice and strategy for engagement.

Gemma described being comfortable reaching out to other Nerdfighters in various forums to see if they would be interested in participating with them on a panel at NerdCon. They were comfortable posting their note in new settings and private messages because of the polite way Nerdfighteria worked. In observing the Forum, any time a new person joined or posted for the first time, they were welcomed with numerous messages and questions about themselves.

Quality of response is an etic code to describe a person's expectation that the response they will receive will be useful and informative. Jeff described how he expected for there to be discussions on the content within the Nerdfighter comment section of videos from CrashCourse or SciShow. "Discussion is going to happen in the comments and that's something that's rare on YouTube, but when you get inside the Crash Course and the SciShow and the Vlogbrothers, you can have actual discussion..." Lia echoed this sentiment. She noted that there were times when she read the comments and did not believe the answers, but when she followed up, it turned out the commenter was correct. This led Lia to have more faith in the information she found in the Nerdfighter community overall.

Time was the primary limiting factor on engagement. This etic code, which refers to the amount of time a person has available to devote to engagement, was referenced by nine of the 15 participants, either in their interviews and diaries, or in their reason for declining a second interview. Time also was referenced as a reason for people not engaging with the Forum, or for returning after an absence. The teens in the interviews

were engaged in a wide range of activities outside of Nerdfighteria, including marching band, Future Business Leaders of America, theater, jobs, caring for siblings, and other commitments. All of these activities limited the degree to which they could engage with Nerdfighteria. Jeff noted that it caused him some stress to not be able to engage in his usual manner when he was busy. Time was frequently referenced in connection with the scavenger hunt, which was quite time consuming. Time was also referenced in conjunction with the ELIS code *hanging out* and for *non-directed monitoring / connecting*, which referred to the practice of scanning a platform for information and will be discussed in detail in the next section. It appears that the time code is a constraint on engagement, as opposed to most other codes, which focused on reasons to engage, at least in the context of Nerdfighteria.

Amichai-Hamburger, et al., (2016) describe the code *privacy and safety* as referring to the technical design of the site. However, this code was also collapsed with an emic code *expressing caution online*, which had less to do with the technical features for ensuring privacy and more to do with the cautious attitude many teens took when sharing information online. Several survey respondents noted that they do not comment because of a desire to preserve their privacy, especially on YouTube where you must have an account to comment. Eight of the 15 participants referred in some way to privacy and safety as reasons for observing over engaging. Riley, one of the younger participants, cited their parents' rules against posting things online, as well as their own caution, as the reason they were an observer. Chris explained during an interview that they used a different name online, which is why they were comfortable

posting in Nerdfigtheria. Chris then assured me that I could use their name in this and other papers (note: I did not, the name Chris is a pseudonym). Ash also felt safe in posting online because they used a different name from their real name. Emma joined the Discord because of their belief, expressed to their parents, that John Green would not open a community that was not safe. Madison, on the other hand, felt that privacy and safety was platform dependent and noted that they avoided posting anything in Tumblr even though they followed many Nerdfighters on Tumblr. Tyler spoke more broadly but described a sense of safety and security in Nerdfigtheria that kept them coming back.

Social loafing refers to the idea that people will post less when they believe others will post more (Amichai-Hamburger et al., 2016, p. 272), i.e., if the topic is already adequately addressed, there is no reason to post. This code is also recognized as a constraint on engagement. This code came up ten times in relation to YouTube comments, four times in reference to Twitter, and once in relation to Reddit. The code never came up in relation to the more intimate communities, such as the Forum, or even the Discord. The code was used once in a positive sense. Jeff described finding himself in a small chatroom following a YouTube Livestream by Hank Green. With the smaller number of people, Jeff felt that his contributions to the discussion were necessary in a way that he did not feel in the larger YouTube comments section. Codes that were not associated with a particular platform tended to refer to a general conception that the participant did not see the need or point to commenting. As Lia

said, "I would love to tell them in real life, but online it's not meaningful." Mira put it thus: "If I do it's mostly on some comment that no one will probably read."

The etic code *socialization* refers to the socialization to the community (rather than socializing in the hanging out or chatting sense). This code was more common in the Forum than in interviews, as participants reflected on their joining Nerdfigtheria or came to the Forum the first time and were welcomed and oriented to the sub-community. Typically, this took the form of Forum members discussing their first experience with a Nerdfigther tradition, such as Project for Awesome, which occurred during the period of observation.

Social capital of respondent/respondee was one of the few emic codes to emerge from this analysis of engagement patterns and is hereafter referred to as social capital. This code emerged through an analysis of the interviewees and Forum observations in which teens referenced their impressions of the social capital of the respondent or their own social capital as the respondee. Often, the locus of this was when one of the Green Brothers either responded directly or retweeted or liked someone's post. This affirmation from the head of the Nerdfigther community was hugely important to the teens. Claire had sent items to the Green brothers as part of an inside joke and when it was referenced in the podcast, she was thrilled. Mira explained how a former VlogBrother's employee replied to an email Mira had sent about the scavenger hunt. Mira was both happy to receive a response and valued that this person, somewhat affiliated with the Green brothers in their mind, took the time to respond. However, the

power of social capital can work in both directions. Jeff had a Twitter exchange with Hank about the location of an appearance, noting that the place Hank promoted was actually not the same city. (Note: In the interest of privacy I am not being more specific about the location, but imagine an event promoted as being in Washington, DC, but actually occurring in Alexandria, VA). Though Jeff was correct and Hank apologized, in the end Jeff felt embarrassed for calling out someone he admired. When these interactions are positive, it goes a long way to increasing the teen's engagement and their comfort with the community. When it is not positive, as in Jeff's case, it is conceivable that this may decrease engagement, though Jeff did not specifically state this.

Self-efficacy was not a particularly common ethic code and refers to an individual's perception of themselves as capable within the context of the community. This low observation of self-efficacy as a code may be due to the low barriers to entry in the Nerdfighter community or the generally welcoming environment, which could make someone's sense of capability less relevant in their decision to engage or observe. Some participants, especially those who were engaged on YouTube, felt that they did not have the experience or ability to add anything to what was, at times, a fast-moving and detailed conversation. There was a strong sense that if a person commented with information, they wanted to be sure it was 100 percent factually accurate. Madison held back because they were worried that they would be incorrect, and Lia noted that by the time she figured out the answer, it was already posted. One survey respondents

describes it this way: “I convince myself that it is not worth it and that nobody cares what I have to say.”

The etic code, *personality*, only came up with Chris and Lia in the interviews. Lia describes herself as “not that social.” Chris described themselves both as an introvert and as “not the most outgoing person, so I don't go in and be like, ‘Hey, guys!’” It is notable that no one self-described as an extrovert or as more likely to engage due to their personality, and yet several of the subjects were quite outgoing; this may have affected their tendency to engage. Within the survey, several people did refer to a personal preference for observation: “I never have been super involved in any online media site, for example I have very few posts on Instagram and Twitter and close to zero comments. I enjoy reading or watching what other people contribute.” I suspect that the description *personality* may be better suited to solely examining lurking, rather than as a code for a broader range of engagement.

STRATEGIES FOR INFORMATION PRACTICES

The prior section examined the factors that influenced teens' decisions to observe or engage. However, there is more to the methods teens use to meet their information needs than simply observing or engaging. Therefore, in this section, I will describe how teens strategize their engagement, beginning with McKenzie's (2003) two-dimensional model of everyday information practices. Teen interview/diary participants exhibited all the practices described by McKenzie: Active Seeking, Active Monitoring, Non-Directed Monitoring, and By Proxy (McKenzie, 2003). McKenzie's (2003) two-dimensional model is a useful lens with which to examine information practices because it incorporates

both making connections (i.e., identifying useful or information rich contexts) and directly interacting with likely information sources. Interaction would encompass the direct seeking of information, but there are other aspects to discovering information. In this case, the connections component is useful to describe some of the information practices of observers.

As discussed in the literature review, *connecting* refers to being in contact with an information source (McKenzie, 2003). As the teens in this study were all participating in some way with an information source, this code was quite common. *Interacting*, in contrast, consisted of actually encountering and engaging with information, either by seeking it directly or by brushing up against it in an environment (McKenzie, 2003). I take a somewhat more expansive view than that taken by McKenzie (2003) in two ways.

First, rather than focus solely on meeting a single, specific information need (see Chapter 2), I am examining information practices more broadly, though I use the framework described by McKenzie. The teens in this study, as has been shown, were voracious consumers and sharers of information generally. They chose to hang out in an information-rich environment, such as the comments section of the SciShow YouTube videos, or in the Discord to see what was happening in the scavenger hunt.

Second, I am examining information exchange from both the perspective of the information consumer *and* the information sharer. The teens in this study were quite happy to be sharing information with their fellow Nerdfighters and found that act to be a valuable and important part of being a Nerdfighter. Some of the sub-codes appear

more often in the context of seeking information and less so in the context of sharing. For example, the code *active seeking / connecting* is not often applied in the context of sharing information, as it refers to identifying a place. Typically, if a place to share the information was identified, then the information was shared, making the applicable code *active seeking / interacting*.

Table 4.2, below, defines the four practices in light of the distinction between connecting and interacting, while giving brief examples from the data and examples from in-real-life contexts.

Table 4.2		
Four Practices Distinguishing Connecting and Interacting		
	Connecting	Interacting
Active Seeking	Seeking or making contact with info sources: (e.g., checking the discord scavenger hunt site, calling a dentist's office)	Asking questions in an information environment (e.g., posting a request for help with a clue on the Discord)
Active Scanning	Going to an information rich environment (e.g., SciShow, library)	Using a likely information environment for spontaneous information (e.g., following up on a SciShow comment with a clarifying question)
Non-directed Monitoring	Regular activities that might result in info. (e.g., going to the Forum, reading the newspaper)	More purely serendipitous - finding information where you would not expect to (examples are harder in this context b/c of the widely varied information present. McKenzie uses the example of a mother observing a man using the stroller she was thinking of buying (2003))
By Proxy	When someone finds information for you. (e.g., looking up a topic that someone is interested in with the intention to share it)	Being told information that someone, without prompting, thinks you need (e.g., when Sam found info on John and Abigail Adams for a friend)

Next, I will discuss each cell from this table, using examples from the data. In coding information interactions, I used etic codes such as active scanning / connecting and active scanning / interacting. In examining the data, an additional emic code emerged—opting out—to describe a handful of situations in which people elected to remove themselves from information practices for a variety of reasons.

Active Seeking / Connecting

Active seeking/connecting is an etic code that describes actively seeking contact with an identified source in a specific place, whether the goal is to give or to get information. Many participants described examining likely platforms where they expected to be able to access whatever information they needed or desired. Emma and others referenced hanging out in the Discord during the scavenger hunt to monitor discussions of clues and share their information, should it be needed. Gabriella described going to the SciShow comments section on YouTube to see if someone addressed the topic she was curious about.

Active Seeking / Interacting

Active seeking / interacting is an etic code which involves asking a preplanned question or engaging in active questioning strategies such as list making. To better encompass information exchange, I have modified this definition to include active and intentional information sharing in an informational and ongoing exchange. This expanded code could encompass answering a question, as well as asking one. It was, by far, the most common code in this area and encompassed every code from the first research question, no doubt due to the ease with which it can be observed in the Forum and

recalled by participants. Within the Forum, questions ranged from the deep to the silly, and encompassed every self. Likewise, Forum participants were eager to offer information in answer to the needs of their fellow Forum members. All participants could recall some instance of active seeking / interacting. For example, Mira turned to the comments section of VlogBrothers, in addition to their parents, to ask questions about Obamacare during the period in the Spring of 2017 when the newly inaugurated President Trump and the Republican-led Congress was attempting to repeal the Affordable Care Act.

Riley liked to share information about the videos and ask detailed questions that both supported their fandom, including things like, “This is probably off topic, but do you guys know what is on the chalkboard starting at around 4:40 and ending with the video?” Sam described sharing information with their NerdCon group about the location of all the members—everyone had put their pins on a map, which the group was eagerly examining for data. Chris indicated a preference for hanging out in a Nerdfighter YouTube live stream chat, (not on the VlogBrothers’ page but on a fan created live stream), where they asked about an event called “tabs for charity” and how many bananas a person would need to eat to get melatonin poisoning. Gemma indicated enjoying the informational aspects of hanging out in a community that is international and intergenerational. They like asking questions like, “Anyone from different countries, is pink lemonade there?”

Active Scanning / Connecting

Active scanning / connecting involves identifying a likely source or browsing in a likely information ground. This was a common etic code, occurring with 12 of the participants. YouTube comments, Twitter, and Reddit were common places for active scanning / connecting, as people would scroll through and see what was going on in Nerdfighteria. Chris describes scrolling through the CrashCourse comments as “half the video,” meaning that for Chris, half the reason to watch the video was to review, understand, and sometimes engage with the comments, even though the comments were often not related directly to the topic of the video. Emma liked to observe the philosophy and spirituality sub-channel on the Discord, because while it moved quickly, it was interesting. Some members would just let videos play without regard to the topic. Lia described observing the comments on SciShow videos, just to see what was being discussed.

Active Scanning / Interacting

Active scanning / interacting involves identifying an opportunity to ask a question; actively observing or listening; or in the context of an online setting, reviewing a board or other information source looking for a particular thing (i.e., crash course comments on a science video to learn more about science). The distinction between active scanning / connecting and interacting is in the degree of examination for a specific topic. Take the example of Lia, as described above. She was observing SciShow broadly to see what was happening. If she had gone to a video on mitosis to review the comments for more details on mitosis, that would have changed the code to interacting. Madison and Chris scan the VlogBrothers comments to get a feel for current events. Rebecca scans

her Chronic Illness Facebook group for information about different illnesses. Some participants reported scanning the Discord for details on specific elements of the scavenger hunt.

Non-Directed Monitoring / Connecting

Non-directed monitoring / connecting is an etic code that refers to serendipitous encounters in unexpected places. The distinction is that the participant is not seeking specific information. Ash found this aspect to be one of the more rewarding parts of participating in a Nerdfighter platform. Ash liked to observe and see what interesting information popped up, particularly on the Discord, where the conversations move quickly, and digressions are common. Gabriella found herself learning chemistry and biology when videos preloaded and she got sucked in. This code came up the most with regards to the larger and more anonymous platforms, such as Twitter, Reddit, and YouTube. As one survey respondent put it, "I wasn't really looking for anything in particular, I usually just stumbled on the information. Mostly YouTube and stuff." In fact, Lia described her experience with Reddit as "I'm mostly just going to see. I don't really come in for anything." This code co-occurred with *intellectual* 11 out of 50 times, which makes sense for a group of people who are curious and simply scroll through platform comments with the goal of being engaged in something interesting.

Non-Directed Monitoring / Interacting

Non-directed monitoring / interacting involves observing or overhearing in unexpected settings, chatting with acquaintances, and refers to the experience of information that comes seemingly out of nowhere, rather than when the focus of conversation is about a

specific topic. This code was prevalent in the Forum, as the topic would frequently shift when someone offered information out of the blue. Non-directed monitoring / interacting often consisted of non-sequiturs. Within the Forum, non-directed monitoring / interacting was characterized by seeking information or offering information seemingly at random. For example, one participant announced that they were looking at a specific college. Recent, prior conversations had not been about colleges and no one had asked him about his college selections. Someone else announced that they had fixed their tablet. These posts seemed designed to spur conversations where none had been taking place. By and large, these posts were not very deep or insightful, but were, instead, ways to spur the conversation to a topic of interest. Sam described how the NerdCon attendees group engaged in this behavior frequently by sending around notes like “Happy Tuesday!” or asking about the weather where people were. This code overlapped with fan-oriented codes among interview participants, often in the use of insider knowledge to signal group membership. For example, Chris described an entire chat about “Frenching” things (slicing into strips like French fries or French cut green beans).

By Proxy / Connecting

By proxy / connecting is when someone is identified as an information seeker or referred to a source through a gatekeeper. This code did not appear frequently. One example was when a Forum member offered to share specific information about composers with a friend from the Forum who they believed to be interested in the topic. By proxy / connecting did not come up in the interview or diary at all.

By Proxy / Interacting

By proxy / interacting describes when a person is told something because it is believed that person needs the information. In the context of sharing information, rather than receiving it, by proxy / interacting refers to telling someone something on their behalf because you think they need it or want it without being directly asked to provide it.

Where non-directed monitoring / interacting could be considered a non-sequitur, this code is a tangent or digression. Within the Forum, this code occurred occasionally. For example, one member of the Forum began offering unsolicited information about the college town where another member was considering applying to college, such as quirks about the town's layout and pronunciation of streets and neighborhoods. As another example, Emma exhibited this behavior when they sent a friend, out of the blue, a link to the Massachusetts history databases because they thought their friend would like to read the original correspondence between John and Abigail Adams.

Opting Out

Opting Out is the lone emic code for this section. It refers to intentionally removing oneself from an information environment. It occurred only a handful of times, but was important to the participants who either elected to opt out, or observed the strategy in practice. In one instance, Claire described how a member of her NerdCon group intentionally stepped out of a conversation which was personally painful to avoid exposure to things that were upsetting. Claire then described how the group noted when they had completed the discussion and reached out to the member who and left to let them know it was safe to return. Within the Forum, people would occasionally log out when they topic was either painful or simply not interesting to them. In at least one

case, the member asked to be tagged when the conversation had run its course so they would get a notification and know to return.

The platforms, strategies, and practices of the participants combined to inform the way a participant engaged in a given platform at a given time. Chapter Five: Discussion will examine the interrelationship between these influences on engagement patterns and propose a new model for considering engagement.

RQ2 SUMMARY

Teens used a variety of methods to answer their everyday information needs and moved between their sub-communities to meet those needs. Teens were thoughtful about which platforms they selected, often drawing on the affordances of the platform as a reason for taking their information need there. Teens exhibited a wide variety of information practices, which were driven by their expectations of the community, their social and emotional needs, and the technical design of the platform. Within the platforms they selected, teens were actively engaged with finding and sharing information, whether through posting a request, searching a platform, or scanning a platform for interesting or needed information. Teens quite frequently simply scanned one of their preferred platforms for something, often of an intellectual nature, that was interesting to them. The practice of non-directed monitoring was somewhat less common as it involved serendipity, which is by its nature not common. Information exchange by proxy was also less common, most likely because by proxy requires someone to anticipate the information needs of another person. Opting out is a new emic code, which describes the practice of choosing to leave a platform because a teen

did not want to engage with the information there. While this code was not common, the teens who did mention it found it valuable, both because they could protect themselves and because they felt free to return when the time was right for them. The findings from RQ2 illustrate the complex and multifaceted nature of information practices for teens online.

RQ3. WHY DO TEENS CHOOSE TO OBTAIN EVERYDAY INFORMATION VIA THE NERDFIGHTER ONLINE COMMUNITY RATHER THAN ANOTHER COMMUNITY OR ANOTHER INFORMATION SOURCE?

Participants described several reasons for their engagement with Nerdfighteria and their desire to seek information therein. They frequently described what they called the *Values of Nerdfighteria*, using terms like positivity, inclusivity, and respect. Participants thought it was important that the community acts on its values rather than merely articulating values. In addition to the more value-oriented view of Nerdfighteria, participants came to Nerdfighteria for two main reasons: 1) 12 of the 15 interview subjects noted that they perceive this community as being *different from the rest of the Internet*, and 2) 11 of the 15 participants and many of the observed interactions on the Forum noted that Nerdfighteria was a place for *intellectuals*, intellectual debates, and pursuits.

It is important to note that many of these codes are intertwined. For example, teens noted that they were confident they would not get “trolled” for sharing their ideas in a Nerdfighter community, which can be viewed as inclusivity or respect. Likewise, this sense of respect is one of the hallmarks that makes Nerdfighteria, in the

eyes of the participants, different from the rest of the Internet. The participants seemed hungry for a place where they could engage in respectful, intellectual debate about a range of issues, from sports to current events to religion, with people from across the globe and throughout the Internet, but still feel safe. Ultimately, all the reasons came under the idea that Nerdfighteria was a unique and different place, or as one participant described it, “a good place on the Internet.” Separately, another participant described Nerdfighteria as “a nice place on the Internet.”

I will begin a discussion of the findings for this research question with an overview of the teen’s perception of the values of Nerdfighteria. Next, I will discuss the importance of an intellectual community. Finally, I will explore their belief that this community is different from the rest of the Internet.

THE VALUES OF NERDFIGHTERIA

Teen participants used words such as inclusive, positive, respectful, and welcoming to describe their reasons for coming to Nerdfighteria. They noted that they would not get trolled for asking questions or airing opinions. The most common code was for the concept of respectful.

Respectful

Teens were comfortable that they could ask questions and engage in discussion with people and that the tone would remain respectful. Mira described it as being “in it together” and that “it’s like a community where anyone can join and everyone will be respected. No matter who you are, what your beliefs are. You can be completely honest. People will still value your opinions and what you say. Everyone’s in it together. We just

want to have fun and make a good impact on the world.” In fact, Mira’s example was that even Yankees and Red Sox fans could have a respectful conversation on the Discord. Chris comes to Nerdfighter platforms because they enjoy a good debate and feels like that is possible in Nerdfighteria. Riley stated that they like that people can have conversations without a fear of judgement. Similarly, Sam says: “the fact that we can have a good conversation about things and be like, ‘Hey, this is what I think. This is why I think it.’ Somebody else can say, ‘Well, I have the opposite opinion for this reason,’ and they can part being friends. Maybe not coming to a solution or anything, but they don't have to fight about it.” Emma described it as “independent thought and an easy respect for a lot of different things.”

Despite this emphasis on respect, the teens were not naïve. They recognized that even in Nerdfighteria things could get heated or people could have strong opinions. It was more that the teens expected that the vast majority of interactions would be respectful. As Gemma describes it, “If you say an unpopular opinion, *someone* will probably hate you, but the vast majority of people in Nerdfighteria will kind of just be like, ‘OK, don't really agree with you but whatever. It's your thing.’”

In contrast, Chris, who is deeply committed to the community, nonetheless felt that they needed to hold back a bit because they are an observant Mormon. In their experience, the community is generally politically liberal and less religious overall. However, even Chris noted that the norms of the community kept them coming back. Because the community emphasizes respectful conversation, Chris can have a rational

conversation about religion. On the other hand, Chris mentioned that the widespread perception that LDS members are anti-gay was frustrating. They described having to explain their personal beliefs and interpretation of the LDS church doctrine. Even with those caveats, Chris feels strongly that they get more respect for their points of view in Nerdfighteria; that, in turn, keeps them coming back. They stated, "It's because I can expect people to try to imagine me complexly. Whereas in other places on the Internet, like in TED Talk comment sections or other places, I don't know. Sherlock fandom even. I don't expect the same level of respect that I would get in Nerdfighteria."

Welcoming

Riley describes the community as one where you will be accepted and welcomed "no matter what your race, gender, or religion, it doesn't matter. You're a Nerdfighter anyway, if you want to be. All accepting." Claire describes how people participate the group chat she is active in and notes that people can come and go as they are comfortable. Sometimes topics of conversations are painful for members, so they leave and return. Rebecca is a part of a Nerdfighter chronic illness group and described how people join and are integrated and welcomed. Within the Forum, new members are greeted with enthusiasm and encouragement. Often, existing members will ask questions to try to engage the new member, typically along the lines of how they found the group, if the new member has a favorite John Green book or VlogBrothers video. Alternatively, the new member and the existing members will use some insider jokes or language to signal membership.

Positive

Teen participants valued the positivity of the community overall. In response to the social upheaval and anger in the country in late 2016 and through 2017, as noted during the discussion of RQ1, the teens were eager to be someplace positive. Jeff talked about wanting to turn to a place where people did not care “who you are or what you are” and that Nerdfighteria was a community that would rather be positive. Jeff liked that he could have fun without being mean, but valued that in Nerdfighteria a difference of opinion meant not just calling people out but engaging with actual information when someone is wrong: “It's providing actual information, rather than just being negative. It's trying to turn it positive, I guess.”

Inclusive

The teen participants in this study describe Nerdfighteria as an inclusive community with lower barriers to entry. Jeff was an active participant in other YouTube fan communities, but felt that one needed to have a certain amount of credibility to be taken seriously in other places. In Nerdfighteria, Jeff felt that the bar was lower and more inclusive; he did not need to prove himself to be included, and that the community was more open overall. Jeff described the difference by noting that in other communities, the main social capital with fellow fans was being followed back by the content creator. In Nerdfighteria, however, sharing between members was valued. Ash describes this phenomenon more succinctly: “the main point of Nerdfighteria is inclusivity.” Sam looked to Nerdfighteria to be a different kind of place than the rest of the world in the difficult time after the 2016 U.S. election, which is why they developed their gender and pronoun information project within the Nerdfighter community.

Acting on the Values of Nerdfighteria

For all the discussion of positivity, respect, inclusivity, and making the world better, the teen participants and members of the Forum really valued the idea that, in their view, the community acts on its values. Whether it was through organized activities, such as Project for Awesome, or through smaller acts that embodied the values of the community, such as providing help and support to fellow Nerdfighters, being a force for good in the world as a community was very important. Emma described it as doing good in the world and “working it out while we are alive.”

In fact, one of the teen participants, Mira, declined their gift card incentive and cited the values of Nerdfighteria as the reason. Instead, Mira asked that I send their incentive as a donation to an organization that supports refugees. Mira noted that the engagement of the community in Project for Awesome creates a community that raises money for good causes and is good to each other. Within the Forum, there was a great deal of pride in the community acting as a force for good. The Forum members repeatedly noted that they had participated in raising over \$2 million for charity.

The scavenger hunt provided an avenue to observe this value. Participants shared information with others, worked collaboratively, and created content to help each other. Claire described a collaboratively created Google Doc to share walk-throughs for clues. It was publically available but printed as white on white, with the exception of headings. To find the information in the walk through, members would highlight the “invisible” text. Claire felt this embodied the community ethos of

helpfulness, in that there was no incentive or reason to create or contribute to the scavenger hunt except to help other Nerdfighters.

These values—respect, inclusivity, and helpfulness—were a point of pride for the interview participants, and to the extent it could be observed, to the Forum participants. Enacting these values was part of what made Nerdfighteria a special place to the participants.

Intellectual

Many of the interview participants were motivated to engage in Nerdfighteria because they perceived it as a place that welcomes intellectuals, that fosters learning, and that privileges informed debate. Not only did 11 of the 15 interview participants specifically reference Nerdfighteria as an intellectual community, but they did so repeatedly and with strong feelings. For these participants, finding a place where they could engage in intellectual discussions was vitally important to them, and it was a distinguishing factor from other communities on the Internet and in their daily lives. Similarly, teens in the Forum had several conversations about the premium Nerdfighteria places on intellectualism, and members of the Discord turned to that community for information because they knew it would be a good place to seek knowledge from a group of like-minded people.

Lia likes Nerdfighteria, and specifically the YouTube comments and Reddit, because it is a group of like-minded people interested in learning: “I think it's very cool, smart little community....There’s no way they just do it because...they think Hank's cute or something.” Madison believes this intellectualism is part of what makes the

community respectful. In their mind, the quality of the discussion is what is most important and that removes the emotional nature of much of Internet discourse.

Many participants in this study, and those in the Forum, found themselves engaged with content they did not expect to like; however, they were motivated to participate because of the nature of the community. For instance, some participants shared that they were exploring areas like biology because the Crash Course videos were unexpectedly interesting and the quality of the comment section increased their engagement. Teens in the Forum were observed sharing open source physics textbooks for no reason other than the excitement of learning something new. While members did engage in content not generally of interest to them, one of the things the participants valued in the membership was the different interests within the community. While Gabriella was exploring biology, a topic that previously did not interest her, she liked that there were people who were into art or literature, as well. “If you're someone like me who likes to learn new things, it's the greatest thing ever.” Isabelle had a similar take. They were studying computer science in school but came to Nerdfighteria to deepen their understanding of the history of computer science, which was not covered in their high school curriculum.

Gemma found that the intellectual nature of the community, combined with the respect and helpful attitude, as noted above, made Nerdfighteria an excellent place to seek feedback on their creative writing projects. Their experience was that people were willing to extend themselves and “dive deeper into topics.” This translates, for them,

into a place where they can comfortably share their writing while getting critical, but not cruel, feedback.

When asked to define or describe Nerdfighteria at the conclusion of the interviews, the idea of a community of learning and intellectuals was frequently mentioned. Tyler defined it as “a place where people go to learn things and are mostly positive.” Isabelle defined it as “educational” and “a good place for anyone who has wide imagination and curiosity about everything.” Lia felt that she was a lone kid “who likes to learn,” but that the community was cool because it was an entire place dedicated to other people who like to learn, which made her feel less alone.

Interestingly, Madison said almost the exact same thing. Several participants noted that you could be silly, but you had to be smart and silly.

DIFFERENT FROM THE REST OF THE INTERNET

One thing that was consistent through the interviews and the Forum was that teen participants came to Nerdfighteria because they perceive it as being different from the rest of the Internet. Repeatedly, the participants used phrases like, “Nerdfighteria is different,” “It’s not like other places,” and “I can’t think of anywhere else where I’ve seen this.” They know that they can come to Nerdfighteria and not get trolled and that the comments sections will be largely respectful, even when there are differences of opinion.

The interview participants had differing theories as to why the community is different, but most participants in the study came back to the norms and values

articulated by the Green brothers and enacted by their fans. Sometimes they emphasized the intellectual component of those values. Sometimes they emphasized the need for respect, making the world better, or to “imagine others complexly.”

Many participants believed the ultimate reason the Nerdfighter community is unique is because of the values articulated from John and Hank Green and implemented throughout the community. The participants reflected back the mottos of the community, such as “imagining other people complexly” or working to “decrease world suck,” without prompting and devoid of sarcasm. Their general belief articulated in the interviews was that because these values are voiced and enforced from the founders on down to the membership, the community has come to embody those values. The participants would drop the phrases into their interviews organically when describing their interactions online. As Chris says, “another thing I liked about Nerdfighteria, it's the respect thing. Just how everybody seems to make an effort to imagine each other complexly.” Sam had a similar observation: “A lot of it has to do with just when you consume a media that basically says, ‘Hey, do good. Consider others. Imagine others complexly.’ I love that saying.... It just becomes part of your values.” Rachel also noted that the messages coming from John and Hank shape the community, especially in its emphasis on community service. Emma joined the Discord because they trusted that the Green brothers would not send them to a place that was not safe. After reading the rules, they felt even more secure. “What I've read about the rules and guidelines, it's all really built around people being safe, having a good time, learning things, and coming together as a community.”

Most participants noted the community's general lack of trolling and the swift reaction when there is trolling. One participant commented, "Right. I've never seen it. It never happened to me. It makes me feel better. That's never been a personal experience." Both Discord channels, Tuataria and Nerdfighteria, include references to inclusivity, kindness, and respect in their rules, though not always in those words (Koana Lisa, 2017; Orotusso, 2017). The Forum's rules likewise emphasize good behavior. As Emma describes it, "The system they've got with admins and moderators really seems to work. I don't understand a lot of it, but they've got a really good system."

RQ3 SUMMARY

Ultimately, the answer to the "why" question is that the teen participants perceive the Nerdfighter community to be different from other places on the Internet in a variety of ways. Whether it is the values they ascribe to Nerdfighteria, or the premium on Intellectualism, or the way those values are enacted and enforced by moderators and other Nerdfighters, it is their perception of a difference that is key. The teen participants described Nerdfighteria as a place where they were comfortable being themselves, asking questions and engaging in debate, or seeking information through monitoring commentary. They felt that they could count on the community to be thoughtful and respectful, and they valued that Nerdfighteria, in their eyes, was a place that values learning as much as they do. For some of these teens, Nerdfighteria is their only safe place. Some members in the Forum described families that did not share their values. Some interview participants described communities that did not understand them, or peers who did not focus on learning in the same way they did. No matter the platform,

it is ultimately the uniqueness of their experience in Nerdfighteria that keeps the teens coming back for information.

SUMMARY OF FINDINGS

This chapter has examined the data to probe the kinds of everyday information teens engage with in Nerdfighteria, the strategies they use to answer their information needs, and why they turn to Nerdfighteria. The data was examined against the research questions and the conceptual framework. Teens sought information on a wide variety of topics, but most often information that was social, cognitive, emotional, or fan-oriented. Teens leveraged their preferred platforms based on expectations of the community, their social and emotional needs, and the technical design of the platform. Teens were also likely to observe a platform or scan for needed or useful information. When they chose to engage directly through posting or responding, it was usually because they had expectations that they could add something of value to the conversation and be treated with respect. In this sense, respect is central to answering the question as to why teens turned to Nerdfighteria. Teens perceive the community as being different from the rest of the Internet, as a place that values intellectualism because the norms and values of the community are articulated and enacted from the top down. These norms and values include valuing civil discussion, a respect for differences, and positivity.

CHAPTER 5 DISCUSSION

The prior chapter focused on the data generated through interviews, diaries, observations, survey, and documents, and was organized around the research questions. This chapter will discuss the findings in light of prior research. This chapter also will examine and extend the findings as contributions to the field as a whole.

COMPARISONS TO PRIOR RESEARCH

ELIS PRACTICES OF TEENS IN ONLINE COMMUNITIES

Prior research on the ELIS needs of teens has asserted that teens engage in information seeking to meet a variety of developmental needs and within a developmental framework (Agosto & Hughes-Hassell, 2006a, 2006b), but focused on the ELIS needs of urban teens. This study broadly affirms Agosto and Hughes-Hassell's (2006a, 2006b) findings within a different setting, an online fan community. Teens in Nerdfighteria were engaged in a wide variety of information seeking practices to meet an assortment of developmental "selves." Like prior research (Agosto & Hughes-Hassell, 2006b, 2006a; McKenzie, 2003b; Reijo Savolainen, 2008), this study found social context for ELIS to be highly important.

This study extends prior research to a new setting: online fan communities.

While the teen participants have similar needs to those in Agosto and Hughes-Hassell's (2006b) study when examining the highest level categorization (e.g. the selves), when those selves are broken down into sub-codes, the teens in Nerdfighteria differ in their focus. This suggests that while teens at a similar developmental stage may have similar

needs at the highest level and in different settings (i.e. urban teens in person vs. geographically dispersed teens in an online setting), each community is unique in the emphasis placed on the certain information needs.

In the case of Nerdfighteria, there were several aspects which fostered teen ELIS practices. First, teens in Nerdfighteria were engaged in ELIS practices around their self-conception as an intellectual. Teens sought a community they perceived as intellectual even when their information needs were not intellectual. Simply by being a part of a community of like-minded people (a phrase which occurred frequently in interviews, the survey and the diary), fostered teen ELIS practices. Intellectualism was a primary factor answering the “why do teens turn to Nerdfighteria” question. However, not all teens are self-described intellectuals. This research, rather than suggesting that all teens need an intellectual community to engage comfortably in ELIS, asserts that teens need a strong *match* between the online community and their self-conception to engage in ELIS practices.

Secondly, this study separates out the Fan self from other selves asserted in prior research. Fan identity was highly important to the teens under study. Self-identification as a Nerdfighter informed their engagement and participation. While this study does not assert the primacy of a fan identity to all teens, it does assert that for those teens who identify as fans, a fan self is a key piece of their identity and should be examined alongside other aspects of their identity. ELIS practices around the fan self included

seeking more information about the object of the fandom, discussions about the nature of the fandom, and providing service to the fan community.

Finally, this study adds to the discussion of ELIS practices of teens by describing why teens turned to one community over another and asserting that the ELIS needs of teens are best met when there is a match between the norms and values of the community and the needs of the teen. In this case, teen Nerdfighters were driven to engage in their ELIS practices when they saw the values of Nerdfighteria being met. Those values, such as inclusivity and positivity, fostered comfort that this was a community where they could seek information without judgement.

FAN INFLUENCE ON INFORMATION PRACTICE

While the information behavior of fans, especially teen fans, is understudied, this dissertation extends the findings of prior research, in particular the work of Masanet & Buckingham (2015) and Price & Robinson (2016). Both prior studies found fan communities to be generally supportive and generous with information; this research affirms that finding. However, the participants in this study were teens, unlike Price & Robinson's (2016) study, and explicitly asked about their reasons for engaging with information in Nerdfighteria, unlike Masanet and Buckingham's (2015) study.

Those teen Nerdfighters who preferred certain social media platforms over others, such as Facebook over Twitter, still had a range of ways to remain engaged with the fan community. The presence of Nerdfighter platforms focusing on a range of topics far beyond the VlogBrothers or their related content, the scope of the community

across ages and geography, and the aforementioned norms, all come together to create a place where teen fans could engage with topics and information of personal relevance. These topics included their fandom, but made room for politics and religion, or cooking and the DIY movement. This finding extends the contributions of prior research by affirming the value of fan communities in everyday life information practices.

Previous fan research has focused on content creation of some kind (Campbell et al., 2015; Lothian, 2013), whereas this study views Nerdfighteria as a community. While there is some Nerdfighter content on fanfiction sites such as Wattpad and artwork on Deviant Art, it is not the intellectual or social locus of the Nerdfighter community. One interview participant specifically noted the difference between the Harry Potter fan community and Nerdfighteria. Gemma commented that the Harry Potter community could get very intense about details of the books and their interpretations. Though there is a great deal of overlap between the Harry Potter fandom and Nerdfighteria, Gemma found the Nerdfighter community to be more welcoming to different points of view, even on their fandoms. For the participants and for those observed, Nerdfighter-related content creation rarely came up. Instead, the participants were focused on two things: First, engaging with their fandom by discussing the latest videos, John Green's new book, or Nerdfighter projects such as Project for Awesome; second, and more frequently, participants and those observed were focused on simply being around like-minded people from across the world and of different ages. This study broadens our

understanding of fan communities beyond those that focus on the creation of fanworks and into an interdisciplinary view of a fan community as an information resource.

As a result of examining this community, we know that teens came to Nerdfighteria because they valued having a place that was different from the rest of the Internet, and that they perceived Nerdfighteria to be more supportive than other fan communities for three main reasons: 1) the values of Nerdfighteria, including positivity, supportiveness, and respect; 2) the intellectual nature of the community; and 3) the perception that Nerdfighteria is different from the rest of the Internet, including differing from other fan communities.

This finding offers insight into how founders, administrators, and community members can shape their community through their values, their interactions, and their enforcement of community standards. While not all teens are looking for an intellectual community, aligning a community with clearly articulated and enforced norms and values is likely to increase the perception of safety and comfort in participation. While this study was focused on teens, it seems likely that many people would welcome an online community that was supportive, respectful, and kind. This study extends the findings of prior research on fan information behavior (Masanet & Buckingham, 2015; Price & Robinson, 2016) by asserting that fan communities can be rich sources of everyday information for teens far beyond the focus of the fandom and that the culture of fan communities as generally supportive and collaborative spaces.

YOUTH INFORMATION ENGAGEMENT

Early foundational work on the concepts of engagement and lurking, such as Preece, Nonnecke, & Andrews (2004), is fairly consistent in the view that information needs can be satisfied without posting. This research began the conversation around the relative merit of lurkers who had previously been seen as a drag on a community. However, these earlier researchers tended to take the view that lurking was a problem to be overcome. Based upon the findings of this research, I would assert that observing a community is one of several ways to be engaged with the community. Some people engage by posting occasionally, some engage by posting frequently, others take on leadership roles, and some engage across platforms within the community, observing in one platform and engaging in another. This engagement is quite complex, and the binary distinction of lurking vs. non-lurking is not always useful to understand people's information practices. Also unproductive is the assumption that people should move along a continuum of engagement to become high-level users. However, this study does reveal some interesting patterns that foster engagement.

Rau, Gao, and Ding (2008) postulate that lurking is related to interpersonal connectedness, and theorize that the point of social networks is for interpersonal relations. However, this study is based on a 2008 view of the Internet and social media. For the participants in this study, social media is so seamlessly integrated into the milieu of their daily lives that they do not distinguish social media from other aspects of the Internet (i.e., websites) in conversation. Participants did seem to divide along a line of those who engaged for social reasons and those who did not; however, they all engaged in social media in some way. Rau, et al., (2008) examined verbal intimacy vs. affective

intimacy and found that higher levels of verbal and affective intimacy correlate to higher levels of posting. They suggest that efforts should be made to foster a positive and welcoming community to encourage more posting. The participants in this study *had* a strong sense of what Rau, et al., (2008) would call affective intimacy—they genuinely believe that the community is supportive and kind, and yet they were not all active posters. However, my observations led me to conclude that engagement via posting had more to do with the scope of the community than direct outpourings of intimacy. Those teens who found their way to a community such as the Forum, one of the Discord channels or a Facebook group, were more likely to engage than those who remained in the YouTube comments or on Twitter. Given the general consensus among participants around the values of the community, I believe that in the case of Nerdfighteria it was not intimacy as Rau, et al., (2008) described it, but rather the affordances of these smaller, contained platforms. Thus, those teens who found their way to a group, such as the NerdCon Attendees Facebook group or one of the Discord channels, were more likely to post, whereas those who remained in Twitter were less likely to do so.

Rather than intimacy, I believe the typology proposed by Amichai-Hamburger et al., (2016) is a better fit to describe the nature of information engagement in Nerdfighteria. In addition to the eleven types, as described by Amichai-Hamburger, et al., (2016), I found the emic codes need for knowledge and the social capital of respondent / resondee to be important factors in a teen's engagement. When a teen really wanted or needed to know something, that desire was highly motivating to engage with their platform of choice. Likewise, the relative social capital of the

respondent or the resposdee was influential. When a teen got a positive response, from one of the Green brothers in particular, it was very important to the teen and served to bond them more closely to the community. When a teen felt that they had more social capital in their sub-community, they were more comfortable engaging there.

Amichai-Hamburger, et al., (2016) broke their eleven types into three larger categories: *individual differences, social group processes, and technological setting*. Need for knowledge would be considered an individual difference, and social capital would be a social group process. While these findings are focused on Nerdfighteria, I believe them to be relevant to other online communities, as both of the new typologies are relatively consistent with the human condition overall. A person's need for knowledge can drive them to take risks, social or other, that they would not otherwise take. Likewise, the relative social capital of those involved in the exchange would be influential for most people. When receiving a positive response from someone with a lot of capital, it would increase the capital of the lesser person. Similarly, people with more social capital are taking less of a risk in engaging. The difference in social capital between people makes the outcome of an exchange more powerful to the person with less social capital—as shown when participants interacted with either of the Green Brothers. Thus, I would propose that in addition to the eleven typologies in the previous research, we incorporate social capital and need for knowledge into a broader discussion of an information engagement continuum.

McKenzie's (2003) model of information practices provided a useful framework to describe how the teen participants and those observed in the Forum strategized their engagement. While McKenzie (2003) examined information interactions in “real life” and around a specific information need, this study took a broader view of information engagement (rather than seeking), examined the phenomenon across a range of online platforms, and with organically occurring information needs. Teens used all the strategies McKenzie (2003) described, in addition to a new strategy I named “opting out.” The interview and diary participants provided a more nuanced view of these interactions, because observations of the Forum would naturally not capture those information practices that did not leave a digital trace. Based on the interview and diary participants, approximately two thirds of information practices recorded involved interactions, about one third involved connecting with resources, and only one percent referred to opting out of information (see Figure 5.1, below).

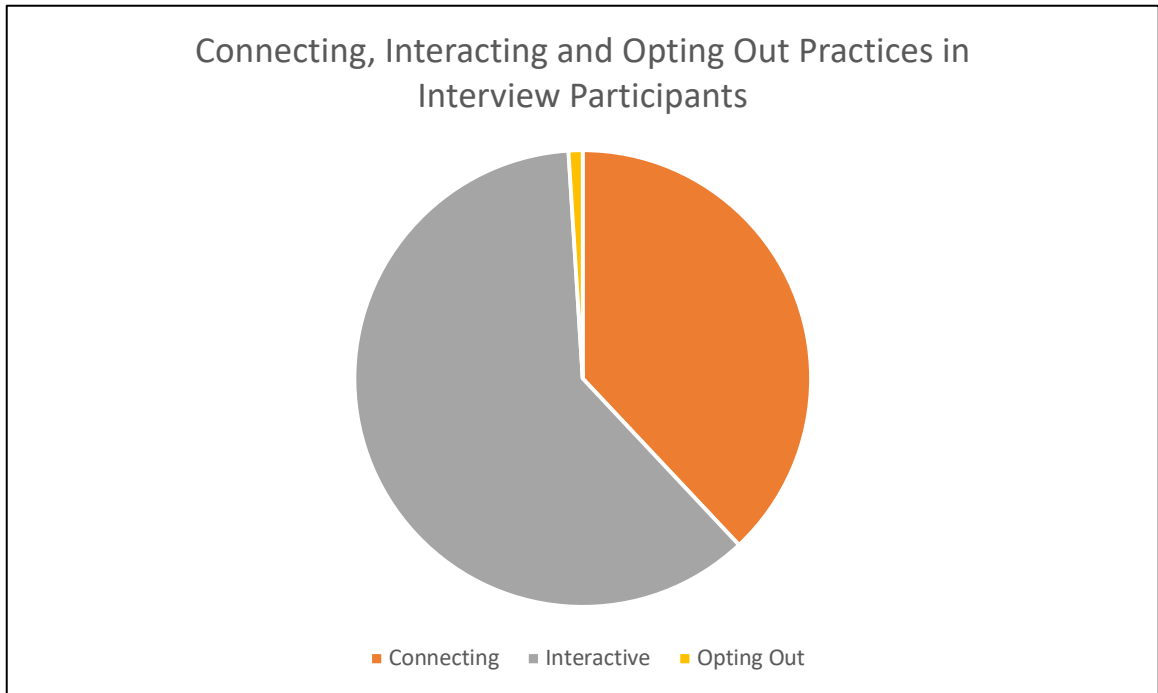


Figure 5.1. Connecting, interacting, and opting out practices in interview participants.

In combination with the high number of codes for information practices, this suggests that the Nerdfighter community was a valuable resource for information and that the teen members of this community were engaged in a variety of practices to meet their information needs. While simply asking for or offering information (active seeking / interacting) was the most common practice, observing their chosen platforms for something interesting (non-directed monitoring / connecting) was also quite common. Figure 5.2, illustrates the percentage of each code for information practices among interview and diary participants.

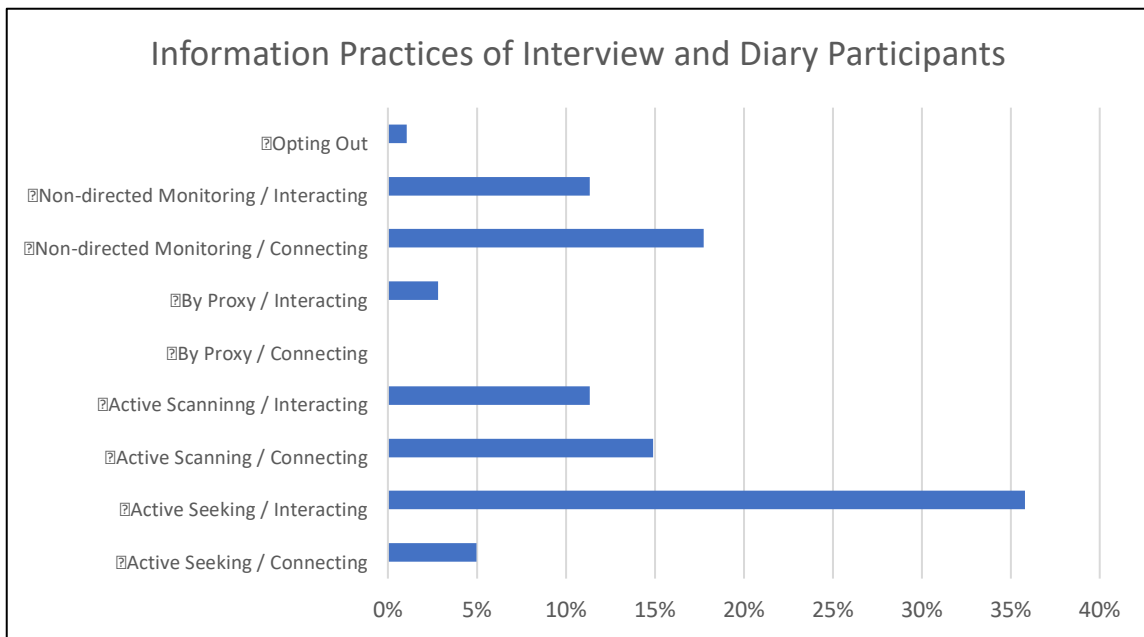


Figure 5.2. Information practices of interview and diary participants.

Through this closer examination of the proportion of codes assigned to interview participants, we can see that unlike prior research, which suggests that lurking levels are high (Brandtzæg, 2010), teens chose a variety of interactive measures to meet their information needs. It is possible that by viewing information practices with this wider lens and through a qualitative interview, we can get a clearer picture of the preferred information practices of teens in Nerdfighteria. Additionally, this research adds to the work of McKenzie (2003) by recognizing a new information practice—the intentional removal of oneself from an information source for a period of time. This finding of opting out is congruent with Magee et al.’s (2017) finding that teens, at times, intentionally limit their technological engagement.

CONTRIBUTIONS TO RESEARCH

This dissertation contributes to the larger body of research through several avenues. First, I will examine the methodological influences that complexity of engagement patterns of teen Nerdfighters. Next, I will examine the interplay between community norms and information needs. Then, I will explore the factors influencing the continuum of engagement relative to everyday information practices. Finally, I will examine the data from the third research question and the relationship to the strategies and practices for engagement.

METHODOLOGICAL INFLUENCES ON EXAMINATION OF YOUTH INFORMATION PRACTICES

In this section I will examine the influence that methodology, and specifically that data collection, has on the ultimate findings of the study. I will begin with a discussion of RQ1 in comparison to previous research and how different data sources might lead to different conclusions about the relative importance of ELIS needs. Then, I will discuss how the strategies for engagement are represented with different data. Finally, I will conclude with a methodological recommendation for future work.

The general ELIS needs of study participants and the observed Forum matched well with prior research, which examined the ELIS needs of urban teens through a developmental lens. Though it was not emphasized in Agosto and Hughes-Hassell's (2006b) study, their empirical model combined online searches with live, person-to-person information seeking, whereas this dissertation instead focuses on online social communications.

As this research shows, teens engaged in a wide variety of topics via Nerdfighteria, some of which were driven by the unique circumstances of the time of the study and the nature of Nerdfighteria. Teens engaged largely in social, cognitive, and fan topics, and to a lesser extent in the remaining topics (emotional, creative, reflective, physical, and sexual). Social practices and topics dominated the coding, as one might expect for teens engaged in social media. The prevalence of cognitive codes was most likely influenced by the nature of Nerdfighteria as a community and the timing of the study, which occurred during and immediately after the 2016 election. Fan self is an emic code, and one that I would argue is critical to this group. For teen Nerdfighters in this study, their identity as a Nerdfighter was very important. I would not assert that everyone has fan self, merely that, for those who are fans, it is a critical component of their self-conception. Future research might examine the nuances of fan selves in different communities and at different levels.

To begin this examination, I compared the selves represented in two different types of data. In the case of Nerdfighteria, observations of the Forum lead to different conclusions about the relative frequency of different ELIS topics when compared to

interview and diary data. Figure 5.3 illustrates the frequency of the selves in coding from the Forum. Figure 5.4 illustrates the frequency of the selves in coding data.

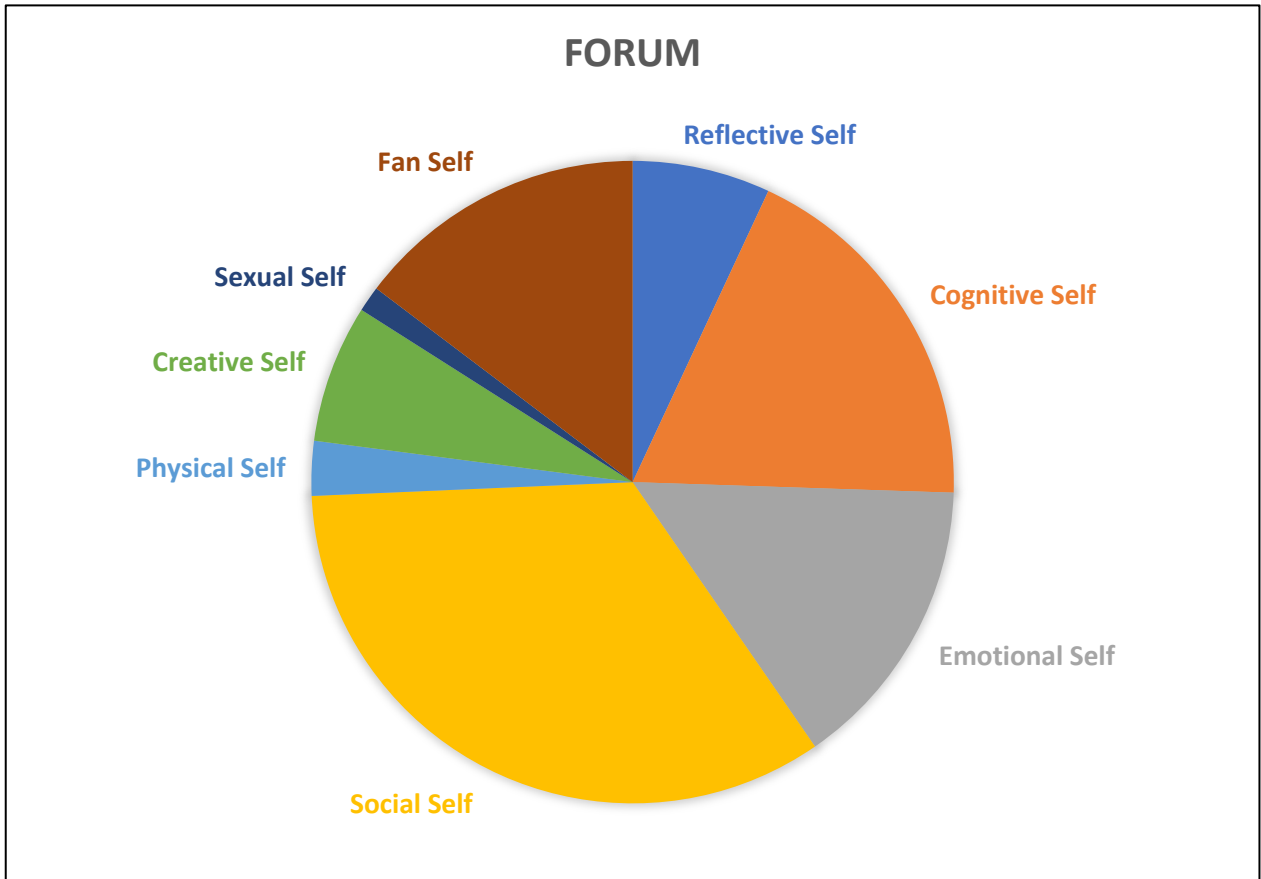


Figure 5.3. Frequency of ELIS selves in Forum.

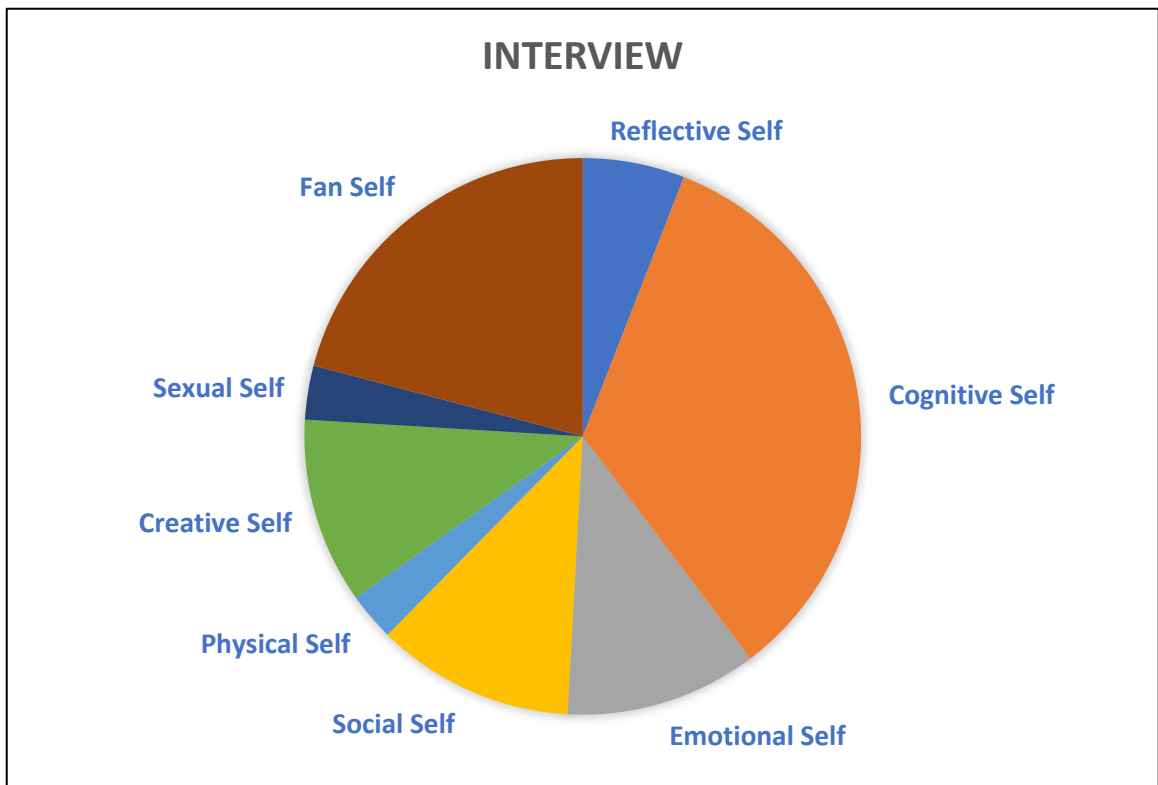


Figure 5.4. Frequency of ELIS selves in interview.

Specifically, the purely social components come to the fore when observing an online venue, whereas other areas are more prevalent when the users are interviewed or complete diaries. This is likely for three reasons: 1) social media forums lend themselves to social interactions, 2) interview subjects are less likely to recall and report the quantity of socially oriented interactions they might have, and 3) the people who are primarily observers do not leave digital traces that are readily understood and thus are not represented in the observation. In this instance, we can see that Nerdfighters who participated in the interview process reported higher engagement in cognitive topics and were somewhat more engaged in creative and fan topics when compared to the observations of the Forum. The difference in interactions between different forms

of data collection illustrates the importance of using multiple methods for gathering data. Figure 5.5 provides side by side comparison of the proportion of codes that came from interview data and from Forum observations.

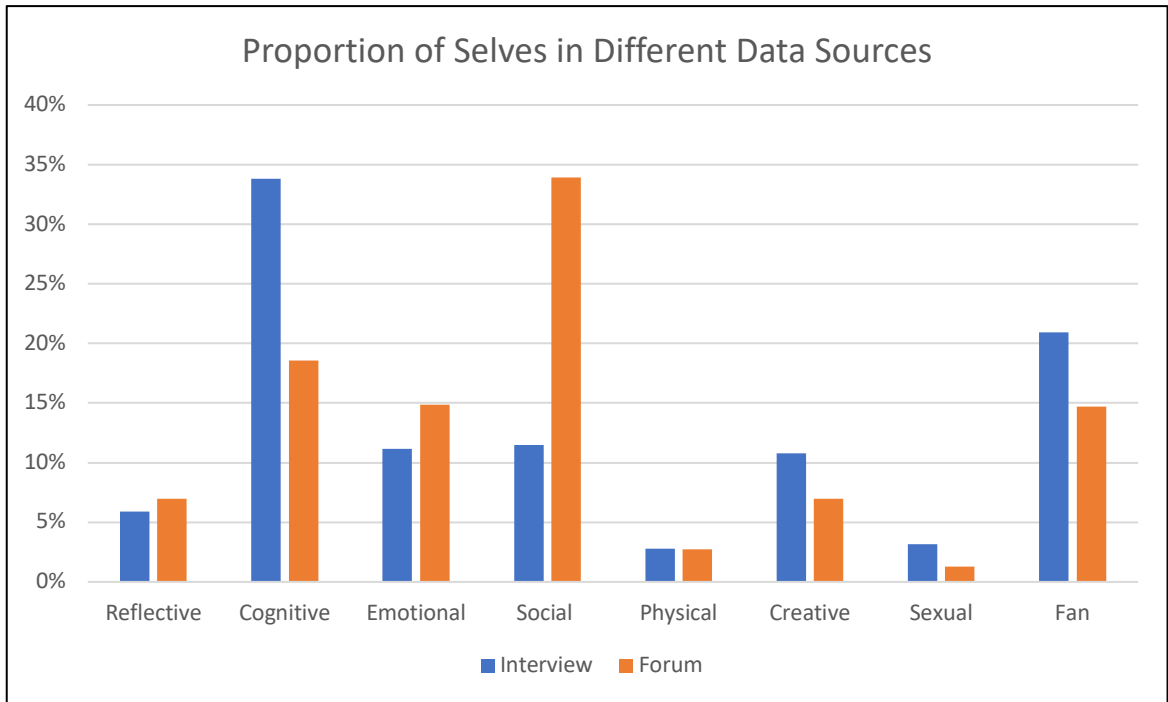


Figure 5.5. Proportion of selves in different data sources.

As a result of these findings—that the relative frequency of certain kinds of ELIS depends on the data collection source—I believe it is critical for research to incorporate a variety of methods for data collection and to recognize that certain practices, in particular social practices, are likely to be underreported in interviews and diaries, while being very prominent in observations.

COMPLEXITY OF ENGAGEMENT PATTERNS

Teen engagement in Nerdfighter platforms is driven by a complex interplay of information needs, community norms, and site affordances. The teens interviewed

uniformly held positive views of the community, and there was no evidence of trolling the community on any platform I observed, nor did the study participants experience trolling. The participants did recognize that trolling probably occurred somewhere, it just was not a part of their experience. They engaged the community across numerous platforms and moved fluidly between platforms based on their information need, the affordances of the platform, and the actions of the sub-community. Teen participants tended not to distinguish between platforms as much as between sub-communities. A teen who was engaged in a sub-community around the scavenger hunt, for example, viewed the scavenger hunt as a single entity, even as they moved between Discord, the scavenger hunt boards, YouTube comments, and the Forum. Their movement was driven by the need for information about the hunt and the specific affordances of the platform. In the case of the hunt, the YouTube comments were frequently the starting point for searches because clues were released with the VlogBrothers' videos. However, the Discord Tuataria channel facilitated discussion more easily, and so participants would move there for a conversation about specific aspects of the hunt. While this is clearly shifting platforms, the participants did not make this distinction in the same way; instead, they considered it all part of the same sub-community—the hunt. Unless we examine information practices at the community level, we are only examining one piece of the puzzle.

Interplay of Community Norms and Information Needs

The examination of the relationship between community norms and information needs was revealing. I reviewed the codes for ELIS topics and selves of participants, and the

reasons they turned to Nerdfighteria to meet those needs. Certain selves were more closely tied with codes and sub codes for *why Nerdfighteria*.

The code *why Nerdfighteria* was most often coded with *social self*, but secondarily coded with *fan self*, then *emotional self*. *Social self* occurred most often with values of *Nerdfighteria*, specifically *respect*. *Fan self* occurred with *respect*, as well, but also with *different from the rest of the Internet* and with *acting on values*. *Emotional self* was spread among the sub codes for *why Nerdfighteria*, which included *welcoming*, *helpful*, *inclusive*, as well as *respect*. However, the main emotional need associated with *why Nerdfighteria* was *emotional support*.

Taken as a whole, these overlapping codes suggest that the values of *Nerdfighteria* are contributing to the *social*, *fan*, and *emotional engagement* specifically. The way the *Nerdfighteria* community implements and enforces its values serves to create a community that encouraged the teens in this study to engage with the platforms. This finding underlines the importance of community norms in fostering engagement, especially around the *social*, *fan*, and *emotional component* of participating in a community. Based on the prevalence of the code *different from the rest of the Internet*, enacting these values is unusual in online communities—12 of the 15 interview and diary participants specifically referenced this difference in describing *Nerdfighteria*. Taken together with the pride the interview participants expressed in *Nerdfighteria*, the positivity of the community is a key component to the loyalty teen *Nerdfighters* feel toward their community. This suggests there are avenues for other

online communities to increase engagement and loyalty through fostering positive values.

Factors Influencing Continuum of Engagement Compared to Everyday Information Practices

The relationship between the factors that influence the continuum of engagement and everyday information practices leads to some interesting observations. In examining connecting practices, we see that community type is by far the highest percentage (28 percent) followed by technical design (14 percent) and social loafing (12 percent). This tells us that the types of responses expected in the community are strongly associated with the idea to seek out that *specific* community for information. We also see that the technical design can cause someone to connect, rather than interact—this combined with the prevalence of social loafing shows that when information needs are met simply by accessing the site, teens may well stop there and not interact. Interacting, on the other hand, has needs gratification as the highest percentage (34 percent), followed by need for knowledge (19 percent) and community type (15 percent). This combination of codes with interacting provides some understanding of why teens interact: they have social or emotional needs; their knowledge need is not met; they believe that the community's response as a whole will be positive. Taken together, social group processes accounted for most of the reasons the teens connected, whereas individual differences accounted for most of the reasons the teens interacted. Table 5.1, below, compares the codes from the revised typology of engagement against the codes connecting vs. interacting framework of information practice to illustrate the interplay between the strategies of information practices and the typology of engagement. The

first section of Table 5.1 shows the percentage of codes by the higher level categories developed by Amichai-Hamburger et al., (2016). The lower section then breaks out the subcodes by percentage, and uses the corresponding color to show which higher level code they fall under (e.g. social group processes are blue, therefore community type is also blue).

Table 5.1 Interplay Between Strategies of Information Practices and Typology of Engagement			
Typology of engagement	Connecting Percent of Whole	Typology of engagement	Interacting Percent of Whole
Individual Differences:	25%	Individual Differences:	58%
Social Group Processes:	56%	Social Group Processes	31%
Technological Setting:	19%	Technological Setting:	8%
Community Type	28%	Needs Gratification	34%
Technical Design	14%	Need for Knowledge	19%
Social Loafing	12%	Community Type	15%
Need for Knowledge	9%	Quality of Response	6%
Time	9%	Technical Design	6%
Quality of Response	7%	Response to Delurking	5%
Privacy and Safety	5%	Self-Efficacy	4%
Social Capital of Respondent/Respondee	5%	Social Capital of Respondent/Respondee	3%
Needs Gratification	4%	Socialization	3%
Personality	4%	Privacy and Safety	2%
Socialization	4%	Social Loafing	2%
Response to Delurking	0%	Time	2%
Self-Efficacy	0%	Personality	0%

Why Nerdfighteria and the Impact on Strategies and Practices for Engagement

When the sub-codes for *why Nerdfighteria* are compared against the codes for the continuum of engagement and the information practices, we begin to see the interrelationship and importance of the community norms even more clearly. Table 5.2 provides details on the coding correlation. Four quadrants are highlighted. The blue quadrant highlights the overlap between the etic and emic codes drawn from Amichai-Hamburger, et al., (2016) and the sub-codes of why Nerdfighteria. The red quadrant highlights the overlap between the etic and emic codes drawn from Amichai-Hamburger, et al., (2016) and the sub-codes of values of Nerdfighteria. Though some items were simply coded values of Nerdfighteria, in this case I am highlighting the sub-codes only to emphasize the specific aspects of those values that are influential.

The etic and emic codes developed from the Everyday Information Practice model (McKenzie, 2003) were less frequently seen. Nonetheless, the green quadrant highlights the Everyday Information Practices against the sub-codes of why Nerdfighteria and the orange quadrant highlights the Everyday Information Practices against the sub-codes of values of Nerdfighteria. Through this comparison, we can see that the code for community type which deals with the kind of response a person is likely to expect co-occurs with respect and different from the rest of the Internet, as well as intellectual and acting on values. However, when viewed from another angle, the importance of an intellectual community had a greater overall relationship with engagement, even more so than respect and different from the rest of the Internet.

Again, we return to the idea that the aspects of Nerdfighteria that the teen participants perceive as unique and value-oriented are highly influential on their information practices and strategies when they are there.

Table 5.2
Coding Correlations

	Why Nerdfighteria	Affordances	Different From The Rest Of The Internet	Diverse	Intellectual	Values Of Nerdfighteria	Acting On Values	Breadth Of Community	Positivity	Respect	Welcoming	Helpful	Inclusivity	Response To Trolling / Lack Of Trolling	Safety
Continuum of Engagement (Amichai et al.)	132	3	29	6	35	104	16	4	15	33	17	6	9	14	6
Community Type	102	1	25	3	19	91	15	3	13	30	11	5	8	12	5
Need for Knowledge	8			1	9	1						1			
Needs Gratification	11	1	1		2	7		2	2	1	4			2	
Personality															
Privacy and Safety	3				1	3				2			1		3
Quality of Response	7			1	5	4			1	2	2			1	
Response to Delurking	2					2					2				
Self-Efficacy															
Social Capital of Respondent/ Respondee	3		2			3	2						1		
Social Loafing															
Time															
Socialization	2		1			1							1		
Technical Design	3	2	1	1	1	1		1							
Everyday Information Practice Model (McKenzie)	66		5	3	30	42	6	1	3	17	9	3	3	6	3
Active Seeking / Connecting	2					2			1			2			
Active Seeking / Interacting	21		2	2	9	15	3		1	6	2	1	2	2	2
active Scanning / Connecting	9				6	3				1		1			
Active Scanning / Interacting	10				1	10				6	3			2	1
By Proxy															
By Proxy / Interacting	3				1	2					2				
Non-Directed Monitoring / Connecting	16			1	11	8	3	1	1	3			1	1	
Non-Directed Monitoring / Interacting	6		3		2	3				1	2			1	
Opting Out															
Totals		7	69	18	132		45	12	37	102	54	19	26	41	20

REVISED CONCEPTUAL FRAMEWORK

This study began with a conceptual framework to explain the engagement patterns of teens in Nerdfighteria. The initial framework developed out of the literature review was revised to reflect the findings of the study and to distinguish between individual-level factors and community-level factors impacting teen engagement. Teens' strategies and practices for information engagement are driven by an interlocking set of individual qualities and community qualities. Depending on the combination of information needs, developmental stage, the community norms, and the affordances of the platform, teen community members will engage at different levels to meet their needs.

Combining a positive community with a platform with specific affordances (such as instant communication via messaging), teens are more likely to use that platform to meet their developmental informational needs. The strategy the teen undertakes will be driven by the kind of information need and the developmental "self" the teen is addressing. Acting on the values of the community to meet the social and emotional needs of the teen community member is the most salient aspect of the everyday information practice.

1. Teens use their fan communities to engage in everyday information practices to meet their developmental stages and selves.
2. Teens will consider the norms and values of the community, in conjunction with the affordances of the specific platform within the community, when choosing how to address their developmental need.

3. As a result of the above two points, teens will engage in a range of information practices that range from observing to sporadic engagement to deep engagement, though this is not necessarily a progression that everyone takes in all platforms, nor is it an idealized outcome for all people.

Figure 5.6, below, illustrates the integrated framework. The blue on the left show a continuum of influences on the way a person engages with their information need. This model moves from internal factors to external factors. Beginning with a unique information need, it then moves to their developmental self (something experienced by most people at a given age), and then to the affordances of the platform to the norms and values of the larger community. These factors combine in the center of the model to spread out into the strategy or practice undertaken by the individual. These strategies range from the observational to the interactive and begin with the occasional choice to opt out of information. For those that elect to engage with information, the first layer of observation is simply scrolling through an interesting source without a specific need in mind beyond general curiosity. Moving from observational to interactive, the model begins with searching for interesting information, observing a conversation for relevant information, and finally engaging in a conversation to meet an information need.

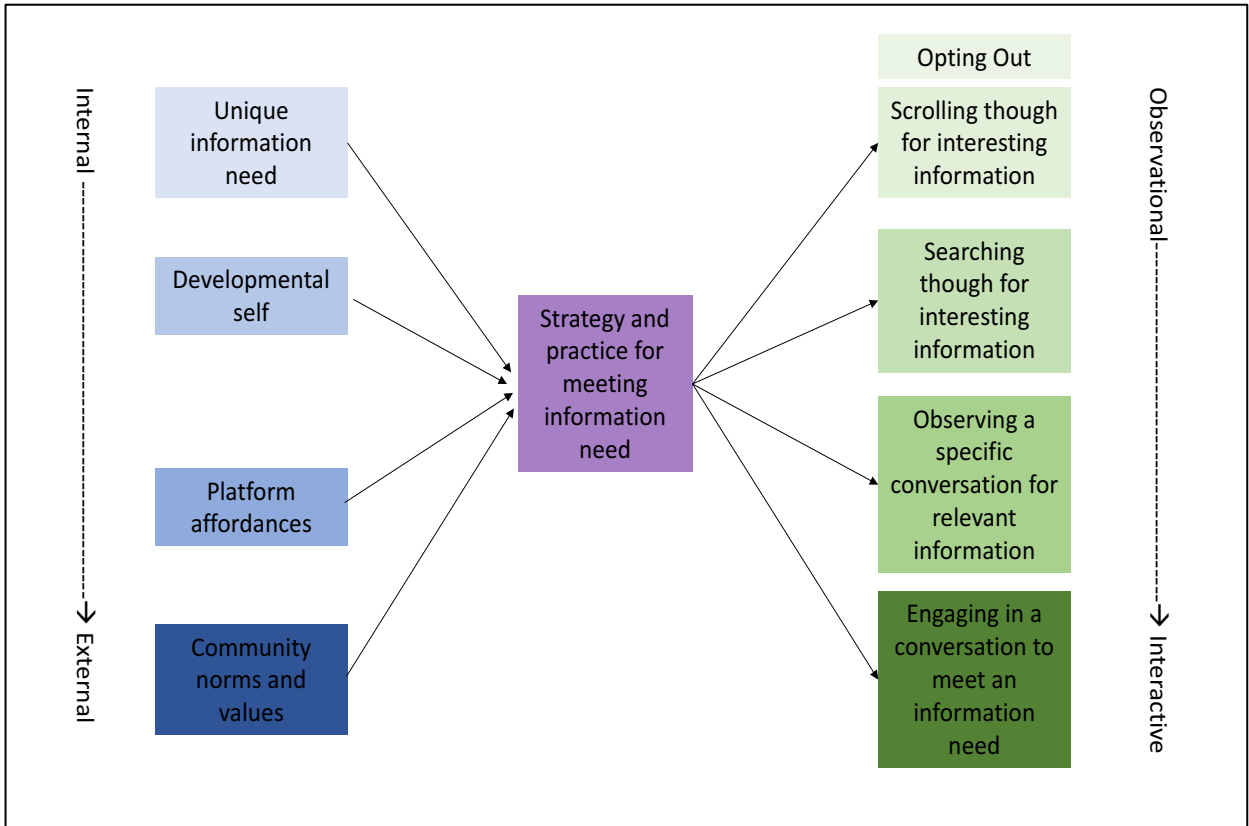


Figure 5.6. Integrated framework of information engagement in an online fan community.

SUMMARY

Teen fan information engagement is quite complex, and this dissertation attempts to integrate several models of information behavior with the data collected to understand the interplay of factors that are influential. Teen engagement practices are driven by strategies and internal forces in conjunction with external factors of community norms and platform affordances. The degree and kind of engagement practice will vary according to variables on the left side of the model.

CHAPTER SIX CONCLUSION

This chapter offers a summary of the findings, issues, and model. Then, I will discuss limitations of this study and the impact such limitations might have. Finally, I will present recommendations for future research including two potential papers for publication, and offer concluding thoughts.

SUMMARY OF FINDINGS

This study was shaped by three research questions: 1) What types of everyday life information do teens seek in the Nerdfighter online fan community? 2) What methods do teens in the Nerdfighter fan community use to answer everyday information needs? And, 3) why do teens choose to obtain everyday information via the Nerdfighter online community rather than another community or another information source? The study was informed by a conceptual framework that sought to examine the ELIS practices of teens in an unexamined context, the information strategies from multiple angles, including the internal and external factors that shape engagement strategies, and the diversity of resultant information engagement strategies. The three propositions of the framework were:

1. Teens use their fan communities to engage in everyday information practices (Reijo Savolainen, 2008), which mirror their developmental needs as teens (Agosto & Hughes-Hassell, 2006b; Subrahmanyam & Šmahel, 2011).

2. Teens engage in a range of information practices from actively seeking, active scanning, non-directed monitoring, and by proxy, which vary according to the degree of interactivity of the information seeker (McKenzie, 2003).
3. The kinds of information practices, types of information sought, and the strategies of observation vs. active engagement (McKenzie, 2003), are driven by the nature of the platform in combination with the norms of the community (Amichai-Hamburger et al., 2016; Preece et al., 2004).

To understand what kind of information teens were engaged with, this study began with a survey to better describe teen participants and questions about preferred platforms and relevant information practices. Next, an open and public teen-oriented Nerdfighter forum was observed for a period of six months. Concurrent with the observations of the Forum, participants were recruited for an interview and diary study, which consisted of three cohorts. Throughout the study, participants were asked questions and communities were observed to determine what information teens were observing, seeking, or gathering. The information sought varied from the profound to the banal and included all selves as described in the literature (Agosto & Hughes-Hassell, 2006b). However, the emphasis in Nerdfighteria leaned heavily toward social, cognitive, emotional, and fan-oriented needs. While most of the selves were represented in previous work, the prevalence and importance of a fan self is new to this study. The degree to which this self is present in other communities and in people who either do identify or do not identify strongly as fans is unknown. To some extent, the emphasis on social self is likely driven by the nature of the platforms as social media outlets. When

the data was reexamined with the observations of the Forum viewed separately from the interviews and diaries, the importance of social practices decreased; this distinction has methodological implications for future research.

Teens used a wide variety of methods and strategies to meet their information needs. Their engagement patterns were driven by a combination of internal and external factors and their own mental model of the platforms in which they participated. Some of the factors were present in prior research; however, the importance of the social capital of the respondent and respondee, as well as the degree to which the participant felt a need for knowledge, were new factors to this study. These factors could encourage or inhibit the teen. For example, those teens who received a positive response from one of the Green Brothers felt more tied to the community and more likely to engage. Likewise, the desire for knowledge drove teens to engage with the community but was dependent on the degree to which the teen was curious or interested. Often this need for knowledge was amorphous, rather than focused. The teens were just generally curious about a topic (i.e., science) rather than seeking a specific piece of knowledge (i.e., the atomic weight of iron).

To understand how teens used their communities, the study examined which platforms they used and how they engaged on them. The nature of cross platform engagement was not well represented in prior research for this population. As the study progressed and second interviews took place, the researcher would often sketch flowchart of the teens' engagement and seek their feedback. Teens often engaged

across a wide variety of platforms and moved between them depending on their information need and the affordances of the platform. While teens switched seamlessly between platforms, they tended to conceive of the platforms as part of a single sub-community, rather than seeing them as separate platforms. For example, a teen might navigate between a Facebook group, Facebook Messenger, Google Hangouts, and Snapchat, while considering all of those platforms to be part of a single community—Nerdcon attendees, for example.

Additionally, this study examined how teens used their community to engage with information when they elected to observe the community rather than engage. The data for this component of the study was drawn both from the survey and from the interviews, and it was examined through the lens of prior research on both lurking and information practices. By integrating these two strands of prior research with the data from the interviews, this study showed a continuum of factors from internal to external, which include prior findings such as the personal needs of the individual and the affordances of the platform, with a renewed emphasis on the norms and values of the community overall. In turn, these factors resulted in the strategies teens used to engage with their platform. These strategies ranged from choosing to opt out (a new finding for this study) when information was overwhelming, irrelevant, or personally painful, to observing a community for interesting or relevant information, to directly asking for or answering an information need.

The third research question was informed by all the data collection instruments. Ultimately, when wondering why the teens turned to Nerdfighteria, the teens repeatedly came back to several points, most of which are new to this study. Specifically, the idea that the values of the community, in conjunction with the sense that it was different from the rest of the Internet, and the confidence that Nerdfighteria was a place for intellectuals, drove their engagement. These factors held whether the teens were observers or elected to directly engage via asking questions. Teens described a place where respect, positivity, and inclusivity were the norm and where the values articulated by the founders were enacted by the members. The teen Nerdfighters in this study were seeking a place where they could be an intellectual and engage in their passions whether it was science, theater, or an alternate fandom such as Harry Potter. Only one participant referenced discomfort with the community. This discomfort was driven by the disconnect between her membership in a conservative religious minority and the generally liberal values of Nerdfighteria. Nevertheless, this participant still thought that Nerdfighteria was a safer place than elsewhere on the Internet and enjoyed discussing and debating her beliefs.

These findings have implications for continued research. This study illustrates the complex interplay of factors that influence teen engagement in fan communities. While there is some prior research that suggests fan communities may function differently from general communities (Masanet & Buckingham, 2015; Price & Robinson, 2016), this is certainly not confirmed. However, this study does provide some credence to the assertion that fan communities may be generally more welcoming places. The

degree to which these values exist in other communities relative to fan communities is not clear. Further exploration of cross platform engagement is certainly warranted. This study examined engagement in Nerdfighteria as it moved between different platforms and found the experiences to be different depending on the platform. Teens would move fluidly between platforms to meet their needs and were driven by a variety of factors, as described in Chapter 4. The affordances of the platforms played a critical role in the movement between platforms, but the teens did not conceive of the platforms as separate. Rather, the teens considered the platforms as a part of a single sub-community.

LIMITATIONS

METHODOLOGICAL LIMITATIONS

Qualitative research can be vulnerable to the assertion of researcher bias. Because the researcher is the one reviewing and interpreting the data, it is possible that the interpretations become tainted by the researcher's own perceptions and hopes. To counter what is known as "researcher effects" (Miles et al., 2014), several steps were taken as described in Chapter Three, including triangulation of data, external review of data and coding, participant feedback via member checking, and examining negative examples. In this case, the strongest negative example was the participant who described some discomfort in Nerdfighteria as a representative of a conservative religious minority.

The data for this study was almost certainly impacted by historical effects. As described in previous sections of this paper, the period of the study happened to

correlate with a period of both national upheaval in the form of the 2016 Presidential election and its aftermath, and a period of renaissance in Nerdfighteria due to the scavenger hunt, the publication of a new book by John Green, a new Nerdfighter convention, and the adoption of a new platform for both the scavenger hunt and for the general Nerdfighter population. These changes could not have been anticipated and resulted in this study documenting a period of change rather than an existing and stable community. Given the exploratory aims of the study, these unanticipated historical effects actually add to the value of this study as an examination of a community in flux and the resultant changes. It is possible that these changes resulted in greater engagement with Nerdfighteria than might have been seen in a different period.

STUDY POPULATION

There are a few aspects of the study population that could impact the findings. First and foremost, the survey population was drawn largely from Twitter users. As discussed in Chapter Three, an announcement with the survey link was posted in many locations, but was retweeted by Hank Green. A few hours after that tweet, the survey went from a handful of respondents to 240. As a result, the survey was not representative of the larger Nerdfighter community. The question asking about social media usage skews heavily to Twitter. It is possible that the responses to other questions on the survey were also impacted. Perhaps the high level of gender fluidity observed in the survey is, in part, a function of the population of teens who use Twitter. There is no clear way to know.

Secondly, the teens who chose to participate may differ from both the larger population of teen Nerdfighters and from teens in the general population. It is possible that teens with a strong positive impression of Nerdfighteria were more likely to participate. It is likely that lurkers or observers in Nerdfighteria online communities may not have responded to my invitations to participate in the survey or interview. It is also possible that teen Nerdfighters are different from other teen fans and from the general population of teens overall. In the case of this community, the teens self-identified as nerdy, intellectual, and quirky. However, a different community might consist of a population of teens who perceive themselves based on a set of criteria unique to that community.

RELATIVE UNIQUENESS OF NERDFIGHTERIA

The relative uniqueness of Nerdfighteria is an additional limitation. The Nerdfighter community was formed as a fandom, but it now functions more as a social community of like-minded people. There is canon content in the form of the VlogBrothers videos and John Green's novels, but the fan focus is also on the brothers themselves. Thus, it is not a canon-based fandom, nor a real person fandom, but some hybrid of both. The Nerdfighter community is less driven by canon texts than is often the case with other fandoms, whether the canon consist of novels, movies, music, or those who create it. However, the Nerdfighter community also differs from fandoms based around real people, in that there is less hagiography of the brothers. The teens were fans, and respected both John and Hank Green, but they also by and large maintained a critical eye. Finally, the Nerdfighter community has relatively little fanwork content. There are

people who create Nerdfighter art on sites such as Deviant Art, but it is not a locus of the community. Finally, the Nerdfighter community is different in the eyes of the teen participants. Indeed, this perception of difference was a primary factor in their engagement with Nerdfighteria. Given these distinctions between Nerdfighteria and other fan community, as well as other online communities, generally, there are limitations on the degree to which these findings could be applicable to other communities without further research to examine the degree and validity of these differences.

RECOMMENDATIONS FOR FUTURE RESEARCH

In many regards, Nerdfighteria appears to be an outlier in online communities. Though this dissertation began with the conception of Nerdfighteria as a common case, it ended with the conception of Nerdfighteria as an unusual case. This section will make recommendations for future research including exploring the relationship between fan communities and information practices, the effect of values on engagement, a deeper exploration of the proposed integrated model of information engagement, and methodological recommendations to address these questions.

FAN COMMUNITIES AND INFORMATION PRACTICES

Future research should examine the impact of values and norms on participation and perceptions of participants, especially teen participants, in other fan communities. As researchers examine other fan communities, are there distinctions between those that are oriented toward canon works, such as the Harry Potter fandom, versus those that are oriented toward people or other content which is less canon-driven. Nerdfighteria is

not focused around fanworks. How does the impact of content creation in the form of fanworks change the dynamic of information practices? Finally, the concept of a fan self needs further exploration both in fan communities and outside. How does a fan self manifest in different communities?

One strategy to examine information practices across fan communities would be to examine a similar information need across several fan communities and regular information platforms. For example, many teen Nerdfighters were interested in cooking. A multi-case study which examined the broad information practices of teen Nerdfighters on a Nerdfighter Facebook group dedicated to cooking, and compared it to something similar in another fan community, such as Mugglenet for Harry Potter fans, and also a subreddit or other media dedicated to teens and cooking, would give insight into information practices across fan communities and general information forums, specifically the kinds of information sought beyond cooking or Nerdfighteria.

EFFECT OF VALUES ON ENGAGEMENT

The participants in this study strongly believed, and the observations affirmed, that the alignment of the values of Nerdfighteria with the environment on Nerdfighter sites encouraged their participation. I have generally asserted that the positivity of the community is at the core of teen engagement. This assertion might be naïve, however. Perhaps there are communities that prefer a more raucous, less respectful environment. Is it a matter of simply each person finding their fit within the great sprawl of the Internet? It would be worthwhile to examine teen involvement in a less supportive environment to determine the extent to which supportiveness and positivity

are driving factors, or whether information engagement is more truly driven by a match between personality and site values. Is engagement in an online community driven by a match between the norms of the community and the values of the participant?

EXAMINING THE INTEGRATED MODEL

As noted at the end of Chapter Five, I propose an integrated model for youth information engagement. The utility of this model should be examined in greater depth and in other settings. As noted in the limitations section, the study participants believed they were participating in an unusual community, which in turn drove their participation. The extent to which the community is *actually* unusual and the degree to which that impacts the engagement of teens is unclear. A cross-case analysis of other online communities, both fan and general, would provide useful information to further refine the model of information engagement. How does the Integrated model describe youth information engagement in different online settings?

PAPER PROPOSALS

In the following section, I include abstracts for two proposed papers that could come from this research. The first abstract focuses on the ELIS needs to teen Nerdfighters. The second abstract focuses on how information practices are enacted across different platforms within Nerdfighteria.

Information Seeking Needs of Teen Nerdfighters

Teens are deeply engaged online (Lenhart, 2015) and in online fan communities in a variety of ways (Campbell et al., 2015; Price & Robinson, 2016). However, little is known about their everyday life information seeking (ELIS) practices in online fan communities.

This study addresses an understudied population, teens, in an understudied area, online fan communities, and an understudied problem, information seeking in a single community but across platforms (i.e. Facebook, Twitter, Discord, and YouTube).

Drawing on the literature on ELIS practices (McKenzie, 2003; R. Savolainen, 1995; Reijo Savolainen, 2008), with a focus on the ELIS practices of teens (Agosto & Hughes-Hassell, 2006a, 2006b), this paper explores the ways an online fan community is leveraged to meet the information needs of teens.

An exploratory case study was conducted in an online fan community known as Nerdfighteria. Members of Nerdfighteria are known as Nerdfighters. Nerdfighters are fans of young adult author, John Green, and science writer and musician Hank Green. Together the Green brothers have a YouTube channel known as VlogBrothers, and several affiliated YouTube channels, such as Crash Course and SciShow. The Greens are also active on many social media platforms and host a weekly podcast.

This study examines the ELIS practices of teen Nerdfighters through a survey of 241 teens, followed by interviews and diaries with 15 teens, and observation of a public online teen Nerdfighter forum to answer the question: *What kinds of everyday life information do teens seek in an online fan community?* Data analysis was concurrent with data collection, and was iterative, and incorporated grounded theory techniques.

This study finds that teen Nerdfighters use their fan community to answer in a wide variety of information needs and that the needs are related to their personal development. There were 483 instances of ELIS practices in the six months in which the

Forum was observed. All of the interview participants used the Nerdfighter community for ELIS practices in some way. Many survey participants describe ELIS practices within Nerdfighteria. The primary information engagements were around social, cognitive, fan and emotional needs, though all other selves were present to some degree. The primary ELIS topics involved seeking or giving emotional support, engaging in intellectual debates around current events, politics, science, and literature, sharing social events, or seeking and sharing fan oriented information. Teens sought subcommunities and alternative platforms fluidly depending on their information need and comfort in direct information seeking over observing a community for information.

The findings from this paper illustrate the potential for information seeking in a fan community for purposes far beyond the focus of the fandom and provides evidence for understanding the ELIS needs of teen fans.

Examining Teen Information Practices Across Platforms

Teen information practices are, as yet, not well understood. When rapidly evolving technology, rapidly shifting communities, and a fan-orientation are included, the information practices of teens in these contexts are even less well examined. Teens are frequent members of online communities (Lenhart, 2015) and deeply engaged in online fan communities (Campbell et al., 2015; Price & Robinson, 2016), but their practices are understudied. This paper will present the findings from an exploratory case study examining when, why, and how teens choose to participate in information practices in one online fan community, Nerdfighteria. This study examines the information behavior

of teens in a single community, Nerdfighteria, but across platforms (i.e. YouTube, Twitter, Facebook).

Nerdfighteria is the community of fans of John and Hank Green. John Green is a New York Times best-selling young adult author. Hank Green is a science writer and musicians. Together, the Green brothers have several YouTube channels (Vlogbrothers being the best known), a podcast, a strong Twitter presence, and occasionally tour together. Their fans are known as Nerdfighters.

This case study of Nerdfighteria included a survey of 241 teen Nerdfighters, an interview with 15 teen Nerdfighters which was followed by a month long prompted diary and a second interview, and observations of a public online community. Participants were asked about their information practices, including when and why they chose to ask or post a question, respond to a post, or lurk and observe within the community. Data was collected between the Fall of 2016 and the summer of 2017. Data analysis was ongoing, iterative and drew upon grounded theory techniques to answer the question: *What methods do teen Nerdfighters use to answer their information needs?*

This paper draws upon prior research on information practices and engagement strategies, particularly the Two-Dimensional Model proposed by McKenzie (McKenzie, 2003), and research into lurking and unlurking (Amichai-Hamburger et al., 2016; Nonnecke, Andrews, & Preece, 2006; Preece, Nonnecke, & Andrews, 2004).

This study finds that teens engage in a wide variety of practices to meet their information needs within the fan community. The practices include moving between platforms to meet their information needs and optimize the technical affordances available, engaging in a range of practices from observing to asking questions, and opting out of platforms for short periods of time.

Participants in the study referenced 37 separate communities which included mainstream social media (i.e. Facebook and Twitter), emerging gaming platforms (Discord), and legacy web forums. Survey participants, drawn largely from Twitter respondents, were highly likely to lurk and cited reasons such as being shy, underage, or unsure of their information. Interview and diary participants were less likely to lurk and often the participants who were involved in a niche platform (for example a Facebook group for Nerdfighter fans of Hamilton) were more likely to engage. For those teens who did engage, the reasons were often because of the nature of the community and the expectation that they would receive a thoughtful response, the social or emotional needs of the participant, and the technical affordances of the specific platform.

METHODOLOGICAL RECOMMENDATIONS

This dissertation was informed by the desire to answer some methodological questions, as well as the research questions. Specifically, I observed that research into online communities tended to fall into camps of small, qualitative research studies or large-scale data scrapes of a single platform. One of the goals of this dissertation was to begin an examination of some middle ground. By using a small-scale survey, a six-month observation, in-depth interviews, a month-long diary, and a follow up interview, as well

as some document analysis, I endeavored to get richer data. Based on this experience, I still believe research would benefit from diverse and mixed approaches to develop a holistic understanding of teen information practices online—qualitative interactive research in the form of interviews and diaries, qualitative observational research in the form of longitudinal observations, and quantitative analysis of demographics and usage statistics.

The *why* question is usually unable to be answered without a qualitative approach, but as we can see from my examination of the prevalence of certain ELIS practices, collecting longitudinal data, whether in the form of a data scrape or an observation, gives very different perspectives on information practices and patterns. To get a fuller understanding of information practices, I believe it is critical to use a variety of methods in approaching a single question. More than an issue of triangulation, varying data collection exposes different practices.

Additionally, as researchers, we need to examine cross-platform engagement, because the experiences of teens in the same community varies wildly by platform. Too often we lean on a single platform of a community. However, the Internet as it currently functions, especially with teens, is more varied. Shifting the research paradigm from examining one platform to examining one community would give us a richer portrait of information practices, especially in an era of rapid technological shifts.

CONCLUDING STATEMENTS

“A nice place on the Internet” is how one participant described Nerdfighteria. They were speaking broadly, not just about a single platform or sub-community, but rather about the wide-ranging sprawl that makes up Nerdfighteria. When asked what information they were looking for, or why they came to Nerdfighteria, most teens referred to finding an intellectual community where they would be able to engage in discussion, debate and question, or simply observe others engaged in those practices, and be judged by the quality of their thinking, writing, and questioning, not their age, gender, or schooling. For teens who often feel like they do not fit in, finding a place they conceive of as different and welcoming to who they are was very important to them. It is not clear that the teens actually are that different from other teens; perhaps it is the nature of adolescences to feel oneself to be an outsider. However, the sense that they had a unique place where they could be themselves was important to the teen participants.

This dissertation is intended to provide insight into the information practices of teen fans in their online fandom. Among the many findings are the intricacy of information engagement, the diversity of strategies that teens use to meet information needs, and the fluidity with which teens approach their information needs. Finally, the practice that teens use to meet a need is the result of the fit between the community norms, the affordances of the platforms, and the individual nature of the teen. This interplay results in a new model of information engagement, which describes the information practices of teens. In conclusion, this study asserts the intelligence, independence, and critical thinking of teens in fan communities to meet their information needs.

APPENDIX A

SURVEY QUESTIONS

Survey text is imported from Qualtrics and reflects the survey logic. For example: If a participant selects an age that is not part of the survey group, the logic will take the participant to the end of the survey.

Teen Nerdfighter Information Seeking

Q33 Welcome to the Teen Nerdfighter Information Survey! I really appreciate your participation. I am a graduate student at the University of Maryland conducting my research on how teen Nerdfighters use their community. This survey is one phase of a longer study. I will keep your answers private and anonymous. This survey is completely voluntary, and you can stop anytime without penalty. Should you have any questions, please feel free to ask! My email is waughamanda@gmail.com. This study has been approved by the University of Maryland's Institutional Review Board.

Q1.1 Let's get started. How old are you?

_____ Slide the bar to your current age (1)

If Slide the bar to your curre... Is Less Than 13, Then Skip To End of Survey
If Slide the bar to your curre... Is Greater Than or Equal to 18, Then Skip To End of Survey

Q2.1 The following questions are mostly demographic. We want to know a little about you in general!

Q2.2 How do you identify?

- Female (1)
- Male (2)
- Questioning (3)
- Genderqueer (4)
- Genderfluid (5)
- Androgynous (6)
- Transgender (7)
- Trans man (8)
- Trans woman (9)
- Transsexual (10)
- Intersex (11)
- Other (12) _____

Q2.3 How old were you when you became a Nerdfighter?

- 8 (1)
- 9 (2)
- 10 (3)
- 11 (4)
- 12 (5)
- 13 (6)
- 14 (7)
- 15 (8)
- 16 (9)
- 17 (10)

Q2.4 What year did you first start watching Nerdifghter videos?

- 2007 (1)
- 2008 (2)
- 2009 (3)
- 2010 (4)
- 2011 (5)
- 2012 (6)
- 2013 (7)
- 2014 (8)
- 2015 (9)
- 2016 (10)

Q2.5 What is the highest grade you have completed?

- Eighth (1)
- Ninth (2)
- Tenth (3)
- Eleventh (4)
- Twelfth (5)
- Some College (6)

Q2.6 With which races / ethnicities do you identify? (choose all that apply)

- White (not Latino) (1)
- Hispanic / Latino (2)
- Black (3)
- Middle Eastern / Arab (4)
- Asian (5)
- Native American (6)
- Other (7) _____

Q3.1 This next section of questions is about your life online.

Q3.2 How often do you go online?

	I am online...							
	Constantly (1)	Several times a day (2)	Once Daily (3)	Several times a week (4)	Once weekly (5)	A few times a month (6)	Once Monthly (7)	Never (8)
How often? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3.3 Which is your primary means for going online?

- Smartphone (1)
- Tablet (2)
- Computer (3)

Q3.4 Tell me more about how you are on the Internet...

	And how often do you use these devices?							
	Constantly (1)	Several times a day (2)	Once Daily (3)	Several times a week (4)	Once weekly (5)	A few times a month (6)	Once Monthly (7)	Never (8)
Smartphone (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tablet (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computer (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3.5 Do you use social media (Snapchat, Instagram, Tumblr, Twitter, Facebook, etc)

- Yes (1)
- No (2)

If No Is Selected, Then Skip To End of Block

Q3.6 Which social media are you a member of?

- Snapchat (1)
- Instagram (2)
- Tumblr (3)
- Facebook (4)
- Twitter (5)
- Vine (6)
- Google+ (7)
- Other (8) _____

Q3.7 Which social media do you use most often?

- Snapchat (1)
- Instagram (2)
- Tumblr (3)
- Facebook (4)
- Twitter (5)
- Vine (6)
- Google+ (7)
- Other (8) _____

Q3.8 Rank your social media in terms of your favorite places to go. Drag your favorite to the top.

_____ Snapchat (1)

_____ Instagram (2)

_____ Tumblr (3)

_____ Facebook (4)

_____ Twitter (5)

_____ Vine (6)

_____ Google+ (7)

_____ Other (8)

Q3.9 Do you feel like your voice is heard...

	Always (1)	Most of the time (2)	About half the time (3)	Sometimes (4)	Never (5)
At Home (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At School (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
With Friends (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online in General (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online in Nerdfighteria (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q4.1 Which Nerdfighter communities are you a member of?

- Facebook (1)
- Tumblr (John or Hank) (2)
- Tumblr (Other Nerdfigters) (3)
- Nerdfighteria Forums (4)
- Reddit (5)
- Ning Forums (old Ning) (6)
- Ning Forums (new Ning) (7)
- Other (8) _____

Q4.2 How often do you watch Vlogbrothers videos?

- Whenever there is a new one (1)
- Whenever I remember to check (2)
- When I come across one (3)
- Never (4)

Q4.3 Do you ever use Nerdfighter Media to find information?

- Yes (1)
- Maybe (2)
- No (3)

Answer If Do you ever use Nerdfighter Media to find information? Yes Is Selected Or Do you ever use Nerdfighter Media to find information? Maybe Is Selected

Q4.4 Tell me more about that... What were you looking for? Where did you go? Did you find out what you needed?

Q4.5 Do you ever use Nerdfighter media to ask a question?

- Yes (1)
- Maybe (2)
- No (3)

Answer If Do you ever use Nerdfighter media to ask a question? Yes Is Selected Or Do you ever use Nerdfighter media to ask a question? Maybe Is Selected

Q4.6 Tell me more about that... What did you ask? Where did you post your question?

Did you find out what you needed?

Q4.7 How often do you comment in a Nerdfighter community?

- Daily (1)
- A few times a week (2)
- Weekly (3)
- A few times a month (4)
- Monthly (5)
- Rarely (6)
- Never (7)

Answer If How often do you comment in a Nerdfighter community? Monthly Is Selected Or How often do you comment in a Nerdfighter community? Rarely Is Selected Or How often do you comment in a Nerdfighter community? Never Is Selected

Q4.8 Tell me more about that.... Is there a reason you prefer not to comment?

Answer If How often do you comment in a Nerdfighter community? Daily Is Selected Or How often do you comment in a Nerdfighter community? A few times a week Is Selected Or How often do you comment in a Nerdfighter community? Weekly Is Selected Or How often do you comment in a Nerdfighter community? A few times a month Is Selected

Q4.9 Are there particular topics / threads / forums that you are more likely to respond to?

Q4.10 What makes you feel like a Nerdfighter?

- Nerdfighter Friends (1)
- Attending Nerdfighter gatherings (2)
- Wearing or making Nerdfighter stuff (3)
- Participating in Nerdfighter projects like Project for Awesome (4)
- Playing Minecraft on the Nerdfighter server (5)
- The Ning (old or new) (6)
- The Kiva Nerdfighter Group (7)
- Watching HankGames (8)
- Watching Nerdfighter Videos (VlogBrothers, CrashCourse, SciShow, etc.) (9)
- Following Nerdfighter related media (10)
- Reading John's books (11)
- Listening to Hank's music (12)
- Something else (13) _____

Q5.1 By completing this survey I affirm that I am between the ages of 13 and 17.

- Yes, I am between the ages of 13 and 17 (1)
- No, sorry! (2)

Q5.2 Would you be interested in participating in a longer range study of Nerdfighters and their information habits? If so, you will need to provide an email address and contact information for an adult parent or guardian. The study will consist of an interview (usually via video call), a month-long diary and a follow up interview. If you participate you will receive (minor) compensation in the form of a small gift card.

- Yes, I am interested! (1)
- No, sorry. Not for me! (2)

Answer If Would you be interested in participating in a longer range study of Nerdfighters and their information habits? If so, you will need to provide an email address and contact information for an adult ... Yes, I am interested! Is Selected

Q5.3 Thank you! Would you please provide me with an email where I can get in touch with you?

APPENDIX B

SURVEY RECRUITMENT NOTE / EMAIL

Hi! I am a graduate student studying how teen Nerdfighters gather information online. If you are between the ages of 13 and 17, would you consider taking a short survey on your experience in Nerdfighteria? It should take less than 15 minutes and is completely confidential. If so, just click on this link! Thanks and DFTBA!

Questions? Email me at waughamanda@gmail.com or check the study website: <http://amanda2315.wix.com/teensandinfo>. You may also contact my advisor, Dr. Mega Subramaniam at mmsubram@umd.edu.

Interview and Diary Study Email

Hi! I am a graduate student studying how teen Nerdfighters gather information online. If you are between the ages of 13 and 17, would be interested in participating in a study? The study would begin with an interview (about an hour long). Next you would complete an online diary (for one month) about how you use the Nerdfighter community. Finally, we would do one more interview (again about an hour). In thanks for your participation, you would receive a small gift card at the end of the study. Thanks and DFTBA!

Questions? Email me at waughamanda@gmail.com or check the study website: <http://amanda2315.wix.com/teensandinfo>. You may also contact my advisor, Dr. Mega Subramaniam at mmsubram@umd.edu.

APPENDIX C

SEMI-STRUCTURED INTERVIEW TOPICS

How long have you been a Nerdfighter?
Which communities are you a part of?
Imagine a time when you needed to know something - more complicated than a google search - how did you find out?
How do you decide where to go for an information need?
Do you ever ask questions in a Nerdfighter community? Can you give me an example
Did you get a good answer?
What makes it a good answer?
What did you do next if it is a bad/unhelpful answer?
How did you feel about the responses you received?
How did you know which responses, if there were more than one, to listen to?
Why did you ask this question in this setting?
Did you ask anywhere/anyone else? If so, how did these answers compare?
Can you remember a time when you responded to someone else's question?
Do you ever just scan Nerdfighter communities for information? Can you tell me more about that?
When you are conversing with someone in Nerdfighteria, do you stay in the original medium? For example, Facebook. Or do you move around to different media?
If you switch, when and why do you do that?
How do you feel about Nerdfighteria overall?
If you could tell me the most important thing about Nerdfighteria, what would it be?
Is there anything else you think I should know about Nerdfighter communities and information?

APPENDIX D

DIARY PROMPTS

Diary prompts are imported from Qualtrics.

Teen Nerdfighter Diary Study

Q1 What is your name:

Q2 Enter a date:

Q3 Have you visited a Nerdfighter community in the last 24 hours

- Yes (1)
- No (2)

Q4 Which ones?

Q5 What did you do there?

Q6 Did you write a post?

- Yes, about... (1) _____
- No, not this time. (2)

Q7 Did you respond to a post?

Yes (tell me about it... what did you respond to and what did you say?) (1)

No, not this time. (2)

Q8 Did you read other people's posts to learn something?

Yes, what did you read or watch? What did you learn? (1) _____

No (2)

Q9 Did you search a Nerdfighter community to learn something?

Yes, what did you search? Did you find what you needed to know? (1)

No (2)

Q10 Did you have a conversation with a Nerdfighter friend online?

Yes, about what? Which medium did you use (FB chat, iMessage, etc) (1)

No (2)

Q11 What else is going on in Nerdfighteria today from your POV? What should I know about?

APPENDIX E

PARENTAL CONSENT FORM

Project Title	Nerdfighters and Their Information Practices
Purpose of the Study	<i>This research is being conducted by Amanda Waugh, a PhD candidate, under the supervision of Dr. Mega Subramaniam, at the University of Maryland, College Park. We are inviting your child to participate in this research project because your child is a teen Nerdfighter. The purpose of this research project is to understand how teen fans use their online communities to gather information.</i>
Procedures	<p><i>The procedures involve two interviews of less than one hour each and a month long online diary. The interview will ask questions about how the teens use their online community to gather information, which communities they prefer and why they choose to gather information through an online community. The diary will cover the same topics, but will ask specific questions about which communities they have visited recently and what information, if any, they gathered.</i></p> <p><i>Sample interview questions include:</i></p> <ul style="list-style-type: none"> • <i>When did you first become a Nerdfighter?</i> • <i>Which communities do you participate in?</i> • <i>Do you ask questions or look for information on the Nerdfighter community? Can you give me an example?</i> • <i>Why did you look for information through Nerdfighteria? Did you seek information anywhere else?</i> <p><i>Sample diary prompts include:</i></p> <ul style="list-style-type: none"> • <i>Did you visit a Nerdfighter community in the last 24 hours?</i> • <i>Which ones?</i> • <i>What did you do there?</i> • <i>Did you look for information or ask a question?</i> • <i>What did you think of the information you found?</i>
Potential Risks and Discomforts	<i>There are no known risks from participating in this research study.</i>
Potential Benefits	<i>There are no direct benefits from participating in this research. We hope that, in the future, other people might benefit from this study through improved understanding of how teens use online communities to gather information.</i>

<p>Confidentiality</p>	<p><i>Any potential loss of confidentiality will be minimized by storing all data on password-protected devices and in a locked office at the University of Maryland. Only the researcher and her advisor will have access to the data.</i></p> <p><i>If we write a report or article about this research project, your child’s identity will be protected to the maximum extent possible. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law. Possible exceptions to confidentiality include cases of suspected child abuse or neglect. If there is reason to believe that a child has been abused or neglected, we are required by law to report this suspicion to the proper authorities.</i></p>		
<p>Compensation</p>	<p><i>Your child will receive a gift card to Starbucks or Amazon worth up to \$20. Each interview will earn \$5 and participation in the diary for the entire month will earn another \$10. The gift card will be sent to your child via email at the completion of the final interview. You will be responsible for any taxes assessed on the compensation.</i></p>		
<p>Right to Withdraw and Questions</p>	<p><i>Your child’s participation in this research is completely voluntary. They may choose not to take part at all. If you or your child decides to participate in this research, you may stop participating at any time. If you or your child decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.</i></p> <p><i>If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator or her advisor:</i></p> <table border="0" data-bbox="649 1218 1526 1470"> <tr> <td data-bbox="649 1218 1071 1470"> <p>Amanda Waugh, Doctoral Candidate 4105 Hornbake Bldg. South Wing University of Maryland College Park, MD 20742 waughamanda@gmail.com 202-213-6022</p> </td> <td data-bbox="1071 1218 1526 1470"> <p>Mega Subramaniam, PhD Associate Professor 4121E Hornbake Bldg, South Wing University of Maryland College Park, MD 20742 mmsubram@umd.edu (301) 405-3406</p> </td> </tr> </table>	<p>Amanda Waugh, Doctoral Candidate 4105 Hornbake Bldg. South Wing University of Maryland College Park, MD 20742 waughamanda@gmail.com 202-213-6022</p>	<p>Mega Subramaniam, PhD Associate Professor 4121E Hornbake Bldg, South Wing University of Maryland College Park, MD 20742 mmsubram@umd.edu (301) 405-3406</p>
<p>Amanda Waugh, Doctoral Candidate 4105 Hornbake Bldg. South Wing University of Maryland College Park, MD 20742 waughamanda@gmail.com 202-213-6022</p>	<p>Mega Subramaniam, PhD Associate Professor 4121E Hornbake Bldg, South Wing University of Maryland College Park, MD 20742 mmsubram@umd.edu (301) 405-3406</p>		
<p>Participant Rights</p>	<p><i>If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:</i></p> <p style="text-align: center;">University of Maryland College Park Institutional Review Board Office 1204 Marie Mount Hall College Park, Maryland, 20742 E-mail: irb@umd.edu Telephone: 301-405-0678</p> <p><i>This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.</i></p>		

APPENDIX F

TEEN ASSENT FORM

Below is information about this project. We would like to invite you to participate, but we want to be sure you understand the project first. Thank you!

Who we are	Researcher Amanda Waugh – University of Maryland
The purpose of our study	I want to talk to teens about how they answer questions or information needs that come up in everyday life. I want to know how participating in online fan communities, such as the Nerdfighter community, impacts how teens gather information.
What's involved in the study	<p>This study has three stages: an interview, a month-long online diary, and a follow up interview.</p> <p>To do both interviews, I will meet with you through online video call or in a public place of your choosing. I will ask you some questions about your participation in Nerdfighteria. The questions will be about when you became a Nerdfighter, which communities you are a part of and how you use the communities to gather information. The interviews should take less than an hour.</p> <p>The diary will take about a month. I will send you a few reminders and prompts to complete the online diary over the course of the month, and I will also give you a link so you can record your thoughts at any other time. The diary will ask you about what you did in Nerdfighteria in the last 24 hours, which communities you visited and what you did there.</p> <p>We won't share anything you say with anyone without your approval. You can tell the researcher at any time that you want to stop, or that you don't want to answer a specific question, and that is completely fine.</p> <p>We will be making audio recordings of the interview so we can keep track of the things you say.</p> <p>As thanks for your participation, we will give you a up to \$20 gift card to a restaurant or shop. Each interview will earn \$5 and completing the diary will earn another \$10. The gift cards will be sent to your email at the conclusion of the final interview.</p>
Your Privacy	I will not tell anyone about the things you do or say while you talk with me. When I write about the study, I will use a made-up name to describe you, so that no one

will know who we are talking about. However, I may share your information with representatives of the University of Maryland, College Park, or government authorities if you or someone else is in danger, or if we are required to do so by law.

<p>Stop at any time / Ask questions at any time</p>	<p>If you decide to participate in my study, you are volunteering to help me, and you can stop at any time without penalty. My email and telephone number is listed below in case you have any questions about the program. You can ask questions at any time. You can also speak with my advisor, Dr. Mega Subramaniam.</p> <div style="background-color: black; width: 500px; height: 20px; margin-bottom: 5px;"></div> <p>Amanda Waugh waughamanda@gmail.com</p> <p style="text-align: center;">202-213-6022</p> <div style="background-color: black; width: 500px; height: 20px; margin-bottom: 5px; display: flex; justify-content: space-between;"> Advisor Contact Info </div> <p>Dr. Mega Subramaniam mmsubram@umd.edu</p> <p style="text-align: center;">(301) 405-3406</p>
<p>Statement of Consent</p>	<p>Your signature indicates that you understand this consent form and your questions have been answered. You are voluntarily agreeing to participate in this study. If you agree, please electronically sign your name, print your name, print your parent's name, and fill in today's date.</p>
<p>Signature and Date</p>	<p>Your e-signature</p> <hr/> <p>Print your name</p> <hr/> <p>Print your parent's name</p> <hr/> <p>Date _____</p> <hr/>

APPENDIX G

INTERVIEW AND DIARY PARTICIPANTS' PLATFORMS

Appendix G	
Interview and Diary Participants' Platforms	
Pseudonym	Platforms
Ash	You Tube VlogBrothers Twitter Podcast Reddit Gishwishes Group Me Facebook Discord Nerdfighteria Dear Nerdfighteria General Turtle Cakes Probably Signed Turtles
Chris	You Tube VlogBrothers Comments Crash Course AMoNeLi Chat Tumblr Road to Nerdfighteria Discord Nerdfighteria Tuatara Reddit
Claire	YouTube VlogBrothers Live Stream Comments Facebook Local Group NerdCon Attendees R&B Chat General Chat Private Subgroup

	<p>Messenger GISHWISHES Group Google Hangout (Attendees Group) Book Club Movie Night Google Doc / Blog Teen Attendees Open Mike Night Dear Hank and John Discord Nerdfighteria Tuataria General Walkthrus Doc (Scavenger Hunt) Twitter</p>
Emma	<p>YouTube VlogBrothers Crash Course SciShow Discord Tuataria General Not So General Voice Chat Creatives Philosophy / Spirituality Literature Live Stream The Dork Side Pets Posting pictures of her cats Scavenger Hunt Walk through Teen Nerdfighters Unite Forum</p>
Gabriella	<p>YouTube VlogBrothers Comments CrashCourse Mythology Biology Twitter</p>
Gemma	<p>YouTube VlogBrothers</p>

	<p>Teen Nerdfighters Unite Forum TNU members' YouTube Channels TNU DropBox TNU Messages Panel Proposal Google Docs Email Text Messages Messaging Ning – OLD Twitter Messaging Tumblr</p>
Isabelle	<p>YouTube VlogBrothers Comments Crash Course Comments Twitter Reddit Tumblr</p>
Jeff	<p>YouTube VlogBrothers Community Tab Comments Hank Green Analytics LiveStream Chat Crash Course 100 Days Holy F-ing Science Twitter</p>
Lia	<p>YouTube VlogBrothers Comments Crash Course Comments SciShow Comments Reddit Twitter Instagram</p>
Madison	<p>YouTube VlogBrothers Comments</p>

	<p>CrashCourse Comments Facebook Local Group Discord Tuataria Leadership Role Podcast Patreon Chat Tumblr Twitter</p>
Mira	<p>YouTube VlogBrothers Comments SciShow Crash Course Twitter Tumblr Nerdfighter Wiki Discord Tuataria Sports General Science Teen Nerdfighters Unite Forum Podcast Instagram Reddit</p>
Rebecca	<p>You Tube VlogBrothers Facebook Local Facebook Group Chronic Illness Support Group Social Sub Group Messenger Conversations Cooking Group Crafting Group Tumblr</p>
Riley	<p>YouTube VlogBrothers Comments Project for Awesome Crash Course</p>

	Podcast
Sam	YouTube VlogBrothers Comments Twitter Facebook Nerdfighter Hamilton fans NerdCon Attendees Attendees Subgroup Messenger 100 days Cooking Nerdcrafteria Discord Nerdfighteria Google Hangout Doc Map Chat Flickr Snapchat Instagram
Tyler	YouTube VlogBrothers Comments Crash Course Comments Podcast Discord Nerdfighteria Facebook Nerdcrafteria Nerdfighter Hamilton Fans Reddit Tumblr Twitter

WORKS CITED

- Agosto, D., Abbas, J., & Naughton, R. (2012). Relationships and social rules: Teens social network and other ICT selection practices. *Journal of the American Society for Information Science and Technology*, 63(6), 1108–1124. <https://doi.org/10.1002/asi.22612>
- Agosto, D., & Hughes-Hassell, S. (2006a). Toward a model of everyday life information needs of urban teenagers, Part 1: Theoretical model. *Journal of the American Society for Information Science and Technology*, 57(10), 1394–1403.
- Agosto, D., & Hughes-Hassell, S. (2006b). Toward a model of the everyday life information needs of urban teenagers, Part 2: Empirical model. *Journal of the American Society for Information Science and Technology*, 57(11), 1418–1426. <https://doi.org/10.1002/asi.20452>
- Amichai-Hamburger, Y., Gazit, T., Bar-Ilan, J., Perez, O., Aharony, N., Bronstein, J., & Dyne, T. S. (2016). Psychological factors behind the lack of participation in online discussions. *Computers in Human Behavior*, 55, 268–277. <https://doi.org/10.1016/j.chb.2015.09.009>
- Asghar, H. M. (2015). Measuring information seeking through Facebook: Scale development and initial evidence of Information Seeking in Facebook Scale (ISFS). *Computers in Human Behavior*, 52, 259–270. <https://doi.org/10.1016/j.chb.2015.06.005>
- Barton, D., & Trusting, K. (Eds.). (2005). Semiotic social spaces and affinity spaces. In *Beyond Communities of Practice: Language, power and social context*. Cambridge, UK: Cambridge University Press.
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, 54(1), 579–616. <https://doi.org/10.1146/annurev.psych.54.101601.145030>
- Bond, B. J. (2016). Following your “friend”: Social media and the strength of adolescents’ parasocial relationships with media personae. *Cyberpsychology, Behavior, and Social Networking*. <https://doi.org/10.1089/cyber.2016.0355>
- boyd, danah. (2014). *It’s complicated: The social lives of networked teens*. New Haven: Yale University Press.
- boyd, danah. (n.d.). Why youth (heart) social network sites: The role of networked publics in teenage social life. *The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning*, 119–142.
- boyd, danah, & Hargittai, E. (2013). Connected and concerned: Variation in parents’ online safety concerns: Connected and Concerned: Variation in Parents’ Online Safety Concerns. *Policy & Internet*, 5(3), 245–269. <https://doi.org/10.1002/1944-2866.POI332>

- Brandtzæg, P. B. (2010). Towards a unified Media-User Typology (MUT): A meta-analysis and review of the research literature on media-user typologies. *Computers in Human Behavior*, 26(5), 940–956. <https://doi.org/10.1016/j.chb.2010.02.008>
- Campbell, J. A., Aragon, C., Davis, K., Evans, S., Evans, A., & Randall, D. P. (2015). Thousands of positive reviews: Distributed mentoring in online fan communities. *arXiv Preprint arXiv:1510.01425*.
- Carter, S., & Mankoff, J. (2005). When participants do the capturing: The role of media in diary studies. *Human-Computer Interaction Institute, Paper 123*.
- Charmaz, K. (2006). *Constructing grounded theory*. London; Thousand Oaks, Calif: Sage Publications.
- Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches* (Second Edition). Thousand Oaks, CA: Sage Publications, Inc.
- Czerwinski, M., Horvitz, E., & Wilhite, S. (2004). A diary study of task switching and interruptions (pp. 175–182). ACM Press. <https://doi.org/10.1145/985692.985715>
- Dervin, B. (1998). Sense-making theory and practice: An overview of user interests in knowledge seeking and use. *Journal of Knowledge Management*, 2(2), 36–46. <https://doi.org/10.1108/13673279810249369>
- Dervin, B. (2010, August). What methodology does to theory: Sense-making methodology as exemplar. Retrieved March 8, 2016, from <http://lib-infoscience.blogspot.com/>
- Erikson, E. H. (1968). *Identity, youth, and crisis*. New York: W. W. Norton.
- Fiesler, C., Morrison, S., Shapiro, R. B., & Bruckman, A. S. (2017). Growing their own: Legitimate peripheral participation for computational learning in an online fandom community (pp. 1375–1386). ACM Press. <https://doi.org/10.1145/2998181.2998210>
- Gee, J. P. (2000). Identity as an analytic lens for research in education. *Review of Research in Education*, 99–125.
- Glaser, B. G., & Strauss, A. L. (2009). *The discovery of grounded theory: Strategies for qualitative research* (4. paperback printing). New Brunswick: Aldine.
- Green, H. (2013). *Census analysis!* Retrieved from https://youtu.be/miRaX5gtb4o?list=PLvqC_ud-2lVoBinQ2Qorb8L_JRmKBrTIR
- Green, H. (2014). *2014 Nerdfighter census analysis*. Retrieved from <https://www.youtube.com/watch?v=Sh5RemPWcds>
- Green, H. (2015a). *Announcing NerdCon: Stories*. Retrieved from <https://www.youtube.com/watch?v=tsb-FXavCFk>

- Green, H. (2015b). *Nerdfighteria census 2015 analysis!* Retrieved from https://youtu.be/Bvb6GcGCqIg?list=PLvqC_ud-2IVoBinQ2Qorb8L_JRmKBrTIR
- Green, H. (2016). *2016 Nerdfighter census analysis*. Retrieved from <https://www.youtube.com/watch?v=MGacCLOLUao>
- Green, J. (2017a). *My new book*. Retrieved from <https://www.youtube.com/watch?v=J8hPlqfcyal>
- Green, J. (2017b). *On motivation*. Retrieved from <https://www.youtube.com/watch?v=Gp-kra5kvQY>
- Green, J. (2017c). *Why I won't run for office*. Retrieved from <https://www.youtube.com/watch?v=Jer0nvzxJHs>
- Green, J., & Green, H. (2009). *How to be a Nerdfighter: A VlogBrothers FAQ*. Retrieved from <https://youtu.be/FyQi79aYfxU>
- Guest, G. (2006). How many interviews are enough?: An experiment with data saturation and variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- Hellekson, K., & Busse, K. (2006). Introduction: Works in progress. In K. Hellekson & K. Busse (Eds.), *Fan fiction and fan communities in the age of the Internet* (pp. 1–32). Jefferson, NC: McFarland & Company, Inc.
- Herman, J. L., Wilson, B. D. M., & Becker, T. (2017). *Demographic and health characteristics of transgender adults in California: Findings from the 2015-2016 California Health Interview Survey*. UCLA Center for Health Policy Research. Retrieved from <http://healthpolicy.ucla.edu/publications/search/pages/detail.aspx?PubID=1695>
- Hill, L. (2017, June 22). John Green to publish his first book since “The Fault in Our Stars.” *Los Angeles Times*. Retrieved from <http://beta.latimes.com/books/jacketcopy/la-et-jc-john-green-new-book-turtles-all-the-way-down-20170622-story.html>
- Hillman, S., Procyk, J., & Neustaedter, C. (2014a). “Alksjdf;Lksfd”: Tumblr and the fandom user experience. In *Proceedings of the 2014 Conference on Designing Interactive Systems* (pp. 775–784). New York, NY, USA: ACM. <https://doi.org/10.1145/2598510.2600887>
- Hillman, S., Procyk, J., & Neustaedter, C. (2014b). Tumblr fandoms, community & culture. In *Proceedings of the Companion Publication of the 17th ACM Conference on Computer Supported Cooperative Work & Social Computing* (pp. 285–288). New York, NY, USA: ACM. <https://doi.org/10.1145/2556420.2557634>
- Hudson, R. C., Duncan, S., & Reeve, C. (2016). *Affinity spaces for informal science learning: Developing a research agenda* (pp. 1–48). TPT Twin Cities Public Television. Retrieved from <http://www.informalscience.org/sites/default/files/AffinitySpacesFinalReport.pdf>

- Hyldegård, J. (2006). Using diaries in group based information behavior research: a methodological study (p. 153). ACM Press. <https://doi.org/10.1145/1164820.1164851>
- Ito, M., Baumer, S., Bittani, M., boyd, danah, Cody, R., Herr-Stephenson, B., ... Tripp, L. (2010). *Hanging out, Messing around, and Geeking out*. Cambridge, MA: The MIT Press.
- Jenkins, H. (2006). *Confronting the challenges of participatory culture: Media education for the 21st century*. MacArthur Foundation. Retrieved from http://digitalllearning.macfound.org/atf/cf/{7E45C7E0-A3E0-4B89-AC9C-E807E1B0AE4E}/JENKINS_WHITE_PAPER.PDF
- Jenkins, H. (2007). The future of fandom. In J. Gray, C. Sandvoss, & C. L. Harrington (Eds.), *Fandom* (pp. 357–364). New York, NY: New York University Press.
- Jenkins, H. (2013). *Textual poachers: Television fans and participatory culture* (Updated 20th anniversary ed.). New York: Routledge.
- Kaveri Subrahmanyam, & Patricia Greenfield. (2008). Online communication and adolescent relationships. *The Future of Children*, 18(1), 119–146. <https://doi.org/10.1353/foc.0.0006>
- Kenten, C. (2010). Narrating oneself: Reflections on the use of solicited diaries with diary interviews. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 11(2). Retrieved from <http://www.qualitative-research.net/index.php/fqs/article/viewArticle/1314/2989>
- Kiva Lending Team: Nerdfighters. (n.d.). Retrieved March 20, 2015, from <http://www.kiva.org/team/nerdfighters>
- Kligler-Vilenchik, N. (2016). “Decreasing world suck”: Harnessing popular culture for fan activism. In *By any media necessary: The new youth activism* (pp. 102–148). New York, NY: New York University Press.
- Kligler-Vilenchik, N. (2013). “Decreasing world suck”: *Fan communities, mechanisms of translation, and participatory politics* (White Paper) (p. 81). Annenberg School for Communications and Journalism. Retrieved from http://www.slideshare.net/amandafo/decreasing-world-suck-working-paper-mapp-june-25-2013?qid=a39ddc8f-86fa-4432-a2ba-5690efec4a7a&v=default&b=&from_search=2
- Knittel, S. (2016, December 16). 4.5% of California youth identify as gender nonconforming. *Seattle Gay News*. Retrieved from http://www.sgn.org/sgnnews44_51/page5.cfm
- Koana Lisa. (2017, August 1). #Rules. *Tuatara*. Retrieved November 15, 2017, from
- Korobkova, K. A. (2014). *Schooling the directioners: Connected learning and identity-making in the One Direction fandom* (White Paper) (pp. 1–40). Irvine, CA: Digital Media and

- Learning Research Hub. Retrieved from http://dmlhub.net/wp-content/uploads/2015/12/Schooling-the-Directioners_Korobkova.pdf
- Kuhlthau, C. C. (1991). Inside the search process: Information seeking from the user perspective. *Journal of the American Society for Information Science*, 4(5), 361–371.
- Lammers, J. C., Curwood, J. S., & Magnifico, A. M. (2012). Toward an affinity space methodology: Considerations for literacy research. *English Teaching: Practice and Critique*, 11(2), 44–58.
- Lee, C. (2015, November 16). *The use of singular “They” in APA style*. Retrieved September 15, 2016, from <http://blog.apastyle.org/apastyle/2015/11/the-use-of-singular-they-in-apa-style.html>
- Lenhart, A. (2015). *Teens, social media and technology overview 2015* (White Paper). Pew Research Center. Retrieved from http://www.pewInternet.org/files/2015/04/PI_TeensandTech_Update2015_0409151.pdf
- Leung, L., & Lee, P. S. N. (2012). The influences of information literacy, Internet addiction and parenting styles on Internet risks. *New Media & Society*, 14(1), 117–136. <https://doi.org/10.1177/1461444811410406>
- Livingstone, S. (2008). Taking risky opportunities in youthful content creation: Teenagers’ use of social networking sites for intimacy, privacy and self-expression. *New Media & Society*, 10(3), 393–411. <https://doi.org/10.1177/1461444808089415>
- Livingstone, S., & Brake, D. R. (2010). On the rapid rise of social networking sites: new findings and policy implications. *Children & Society*, 24(1), 75–83. <https://doi.org/10.1111/j.1099-0860.2009.00243.x>
- Lothian, A. (2013). Archival anarchies: Online fandom, subcultural conservation, and the transformative work of digital ephemera. *International Journal of Cultural Studies*, 16(6), 541–556. <https://doi.org/10.1177/1367877912459132>
- Madden, M., Lenhart, A., Duggan, M., Cortesi, S., & Gasser, U. (2013). *Teens and technology 2013* (White Paper). Pew Research Center. Retrieved from http://www.pewInternet.org/~media//Files/Reports/2013/PIP_TeensandTechnology2013.pdf
- Magee, R. M., Agosto, D. E., & Forte, A. (2017). Four factors that regulate teen technology use in everyday life (pp. 511–522). ACM Press. <https://doi.org/10.1145/2998181.2998310>
- Marwick, A. (2005). “I’m a lot more interesting than a Friendster profile:” Identity presentation, authenticity and power in social networking services. *Internet Research*, (6).

- Masanet, M.-J., & Buckingham, D. (2015). Advice on life? Online fan forums as a space for peer-to-peer sex and relationships education. *Sex Education, 15*(5), 486–499.
<https://doi.org/10.1080/14681811.2014.934444>
- McKenzie, P. J. (2003). A model of information practices in accounts of everyday-life information seeking. *Journal of Documentation, 59*(1), 19–40.
<https://doi.org/10.1108/00220410310457993>
- Mehl, M. R., & Conner, T. S. (2012). *Handbook of research methods for studying daily life*. New York: Guilford Press. Retrieved from
<http://public.eblib.com/choice/publicfullrecord.aspx?p=800606>
- Meyers, E. M., Fisher, K. E., & Marcoux, E. (2009). Making sense of an information world: The everyday-life information behavior of preteens. *The Library Quarterly, 79*(3), 301–341.
<https://doi.org/10.1086/599125>
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (Third edition). Thousand Oaks, California: SAGE Publications, Inc.
- Moran-Ellis, J., & Venn, S. (2007). The sleeping lives of children and teenagers: Night-worlds and arenas of action. *Sociological Research Online, 12*(5). <https://doi.org/10.5153/sro.1606>
- Oddy, R. N., Belkin, N. J., & Brooks, H. M. (1982). ASK for information retrieval, part I: Background and theory. *Journal of Documentation, 38*(2), 61–71.
- Orotusso. (2017, May 1). #Welcome. *Nerdfighteria*. Retrieved November 15, 2017, from
- Preece, J. (2001). Sociability and usability: Twenty years of chatting online. *Behavior and Information Technology Journal, 20*(5), 247–356.
- Preece, J., Nonnecke, B., & Andrews, D. (2004). The top five reasons for lurking: Improving community experiences for everyone. *Computers in Human Behavior, 20*(2), 201–223.
<https://doi.org/10.1016/j.chb.2003.10.015>
- Price, L., & Robinson, L. (2016). “Being in a knowledge space”: Information behaviour of cult media fan communities. *Journal of Information Science, 16555151665882*.
<https://doi.org/10.1177/0165551516658821>
- Rau, P.-L. P., Gao, Q., & Ding, Y. (2008). Relationship between the level of intimacy and lurking in online social network services. *Computers in Human Behavior, 24*(6), 2757–2770.
<https://doi.org/10.1016/j.chb.2008.04.001>
- Rideout, V. J., Foehr, U. G., & Roberts, D. F. (2010). *Generation M2: Media in the lives of 8- to 18-year olds*. Menlo Park, CA: Henry J. Kaiser Family Foundation. Retrieved from
<http://www.kff.org/entmedia/upload/8010.pdf>
- Savolainen, R. (1995). Everyday life information seeking: Approaching information seeking in the context of “way of life.” *Library & Information Science Research, 17*, 259–294.

- Savolainen, R. (2008). *Everyday information practices: A social phenomenological perspective*. Lanham, Md: Scarecrow Press.
- Spink, A., & Cole, C. (2006). Human information behavior: Integrating diverse approaches and information use. *Journal of the American Society for Information Science and Technology*, 57(1), 25–35. <https://doi.org/10.1002/asi.20249>
- Subrahmanyam, K., Greenfield, P. M., & Tynes, B. (2004). Constructing sexuality and identity in an online teen chat room. *Journal of Applied Developmental Psychology*, 25(6), 651–666. <https://doi.org/10.1016/j.appdev.2004.09.007>
- Subrahmanyam, K., & Šmahel, D. (2011). Connecting online behavior to adolescent development: A theoretical framework. In K. Subrahmanyam & D. Smahel (Eds.), *Digital Youth: The Role of Media in Development* (pp. 27–39). New York, NY: Springer New York. https://doi.org/10.1007/978-1-4419-6278-2_2
- Todd, R. J. (2003). Adolescents of the information age: Patterns of information seeking and use and implications for information professionals. *School Libraries Worldwide*, 9(2).
- Vraga, E. K., Thorson, K., Kligler-Vilenchik, N., & Gee, E. (2015). How individual sensitivities to disagreement shape youth political expression on Facebook. *Computers in Human Behavior*, 45, 281–289. <https://doi.org/10.1016/j.chb.2014.12.025>
- Williams, A. L., & Merten, M. J. (2011). iFamily: Internet and social media technology in the family context: IFAMILY. *Family and Consumer Sciences Research Journal*, 40(2), 150–170. <https://doi.org/10.1111/j.1552-3934.2011.02101.x>
- Williamson, K. (1998). Discovered by chance: The role of incidental information acquisition in an ecological model of information use. *Library & Information Science Research*, 20(1), 23–40.
- Wilson, T. D. (1997). Information behaviour: An interdisciplinary perspective. *Information Processing & Management*, 33(4), 551–572. [https://doi.org/10.1016/S0306-4573\(97\)00028-9](https://doi.org/10.1016/S0306-4573(97)00028-9)
- Wilson, T.D. (2000). Human information behavior. *Informing Science*, 3(2), 49–55.
- Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-Mediated Communication*, 10(3), 00–00. <https://doi.org/10.1111/j.1083-6101.2005.tb00259.x>
- Yardi, S., & Bruckman, A. (2011). Social and technical challenges in parenting teens' social media use (p. 3237). ACM Press. <https://doi.org/10.1145/1978942.1979422>
- Yin, R. K. (2014). *Case study research: Design and methods* (Fifth edition). Los Angeles: SAGE.