

RECONCEPTUALIZING NOSTALGIA MARKETING

by

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TABLE OF CONTENTS

LIST OF FIGURES	7
LIST OF TABLES	8
ABSTRACT	9
INTRODUCTION	11
ESSAY 1: THE NOSTALGIA SCALE.....	15
Introduction.....	15
Conceptualizing Nostalgia.....	17
Nostalgia for “The Past”	18
Nostalgia as an Emotion	20
Dimensions of Integral Nostalgia	23
Warmth	24
Loss.....	25
Simplicity.....	26
Method.....	27
Study 1 – Developing, Purifying, and Refining Items	27
Study 1a Method	28
Study 1a Results	28
Study 1b Method	30
Study 1b Results.....	31
Discussion	33
Study 2 – Manipulating Integral Nostalgia.....	35
Method.....	35
Results	35
Discussion	37
Study 3 – Predicting Who Responds Favorably to Nostalgic Ads	37
Method.....	37
Results and Discussion	39
Study 4 – Predicting Which Nostalgic Products Consumers Choose	41
Method.....	41
Results and Discussion	43

Study 5 – Establishing a Nomological Network.....	45
Antecedents of Integral Nostalgia.....	45
Consequences of Integral Nostalgia.....	47
Study Overview.....	48
Method.....	48
Results and Discussion.....	50
General Discussion.....	53
Managerial Implications.....	54
Theoretical Implications.....	55
Limitations and Future Directions.....	57
Conclusion.....	61
ESSAY 2: THE STORY OF MY LIFE: HOW NOSTALGIA PERSUADES THROUGH REFLECTIVE IMMERSION.....	62
Introduction.....	62
Theoretical Background.....	65
Persuading with Nostalgia.....	65
Reflective Immersion.....	67
The Present Research.....	70
Study 1: Testing the Effect of Nostalgia on Narrative Transportation.....	71
Pilot Study – Nostalgic Ads Evoke More Cognitive Processing Than Positive Ads.....	72
Study 1a – Manipulating Nostalgia Through Reflection on a Nostalgic Memory.....	75
Study 1b: Manipulating Nostalgia Through Reflection on a Nostalgic Place.....	79
Study 1c: Manipulating Nostalgia Through Nostalgic Advertising.....	81
Study 1 Discussion.....	84
Study 2: Persuasion Through Reflective Immersion.....	85
Stimuli.....	85
Participants and Procedure.....	86
Results and Discussion.....	86
Study 3 – Competitive Mediation: Positive Affect and Transportation.....	87
Stimuli, Participants, and Procedure.....	87
Results and Discussion.....	88
Study 4 – Inhibiting Nostalgic Reflection.....	89
Stimuli.....	90

Participants and Procedure.....	90
Results and Discussion	91
General Discussion.....	92
Theoretical Implications	93
Managerial Implications	95
Limitations and Future Research	96
Appendices	99
Appendix A - Essay Study to Develop Dimensions of Nostalgia.....	99
Appendix B - How We Refined Our Nostalgia Scale Items.....	102
Appendix C - List of All Scale Items	103
Appendix D - Study 4 Stimuli from the “Choice of Trailer” Task	104
Appendix E - Within-Subjects Replication of Study 2	107
Appendix F - Measures Used in Studies	109
Appendix G - Survey Stimuli from Study 1c.....	111
Appendix H - Study 1c Full Results.....	117
Appendix I - Survey Stimuli from Study 4.....	118
References.....	123

LIST OF FIGURES

Figure 1: Confirmatory Factor Analysis Results for Study 1b.....	32
Figure 2: Advertisements Used in Study 3.....	38
Figure 3: Results of Study 3.....	40
Figure 4: Stimuli Used in Study 4.....	42
Figure 5: Results of Study 4.....	44
Figure 6: Study 5 Measure of Overlap of Self and Values.....	50
Figure 7: Study 5 Factor Loadings.....	52
Figure 8: Results of Study 1.....	84

LIST OF TABLES

Table 1: Study 1a EFA Results.....	30
Table 2: Study 1b Statistics.....	31
Table 3: CFA Model Coefficients, Means, and Fit Statistics.....	34
Table 4: Results of Study 4.....	45

ABSTRACT

Nostalgia influences popular culture, appears in advertisements, turns out voters, and leads consumers to buy products, brands, and fashions from bygone eras. Yet we still do not have a clear definition of what nostalgia is, which consumers feel nostalgic for certain stimuli over others, or even why nostalgia marketing is effective in the first place. My goal with this dissertation is to establish a better framework for understanding—and answering—these questions. In Essay 1, I argue that marketing researchers and practitioners would benefit from a scale that measures the extent to which consumers feel nostalgic for different time periods (i.e., integral nostalgia). I then develop and validate an 11-item scale to measure integral nostalgia. Specifically, the scale measures three dimensions of nostalgia: warmth, loss, and simplicity associated with the time. The Nostalgia Scale is flexible enough to measure nostalgia for personal (e.g., college years), cultural (e.g., the 1990s), and vicarious (e.g., the Old West) time periods. Across six studies, I demonstrate the validity of the Nostalgia Scale and show that it (a) responds to manipulations of integral nostalgia, (b) better predicts nostalgic choices than alternative scales, (c) predicts which consumers respond more favorably to a nostalgic advertisement, and (d) can be used to test novel predictions about the causes and consequences of feeling nostalgic for a past time. In Essay 2, I discuss how academics and industry experts alike have theorized that nostalgia marketing works because it triggers positive emotions in consumers, which then transfer to whatever brand or product is being marketed. I then argue that this understanding of nostalgia marketing is incomplete. I propose that nostalgia marketing also persuades through a phenomenon I refer to as reflective immersion. Reflective immersion occurs when reflection (e.g., on memories) is so vivid and realistic that it leads to narrative transportation: deep immersion into a story or message. Across six experiments and one study

that uses real-world data, I find that nostalgic (vs. non-nostalgic) stimuli and memories evoke reflective immersion, which I operationalize as deeper cognitive processing (pilot study and Study 4) and higher levels of narrative transportation (Studies 1a-3). Importantly, I find that reflective immersion mediates the effect of nostalgic ads on brand attitudes, above and beyond the effect of positive emotions. These findings suggest that reflective immersion plays a role in how nostalgia is formed and in how nostalgia marketing persuades.

INTRODUCTION

“Make America Great Again” was the rallying cry and campaign slogan for Donald Trump’s campaign in the 2016 U.S. presidential election. Mr. Trump paired this slogan with the vision of a country that existed in the 1950s, before openminded liberalism had become a norm in the western world. He made a host of campaign promises to bring back manufacturing jobs, rid the country of illegal immigrants, and roll back the political correctness that had overtaken the nation. Politicians normally speak positively about American exceptionalism and how the country is already great. So why was Mr. Trump’s negative depiction of present-day America effective? The answer, I argue, lies in nostalgia.

Nostalgia—which is usually defined as a sentimental longing for the past—is a powerful emotion used by politicians, marketers, and product designers to persuade and influence consumers. Brands as diverse as General Mills, Nintendo, Nike, Pepsi, Volkswagen, and Motorola have recently brought back products that were popular in decades past. Super Bowl commercials send viewers from the dusty trails of the Old West to the neon-clad boy bands of the 1990s. Because nostalgia is so frequently used to persuade, it makes sense that marketing researchers have taken more of an interest in this emotion over the past decade. Yet, as I argue in both essays of this dissertation, we still do not have a clear definition of what nostalgia is, which consumers feel nostalgic for certain stimuli over others, or even why nostalgia marketing is effective in the first place. My goal with this dissertation is to establish a better framework for understanding—and answering—these questions.

Each essay in this dissertation challenges the prevailing narrative about what nostalgia is and how it should be studied. Specifically, nostalgia is today widely considered to be an emotion that (1) mostly arises from personal memories for specific events, many of which (2) involve

friends and family and (3) are more positive than negative. In other words, the prevailing narrative is that nostalgia is positive and centered on personal memories of friends and family. Contemporary experimental papers about nostalgia frequently use one or more of these points to explain how nostalgia affects people or why certain contexts (e.g., when we are lonely) make us more likely to feel nostalgic. Because nostalgia seems to arise from memories of one's personal past, nostalgia manipulations and scale items focus on a personal past (Batcho 1995; Hepper et al. 2012; Wildschut et al. 2006). Because nostalgic memories usually involve friends and family, we are not surprised by the common finding that people feel closer to friends and family when they feel nostalgic (Baldwin, Biernat and Landau 2015; Sedikides et al. 2016; Wildschut et al. 2010). Because nostalgia is mostly positive, it also makes sense that nostalgia persuades primarily by making people feel good (Muehling and Pascal 2011, 2012; Muehling and Sprott 2004). My dissertation challenges aspects of this prevailing narrative around nostalgia and its core assumptions.

In essay one, I challenge the notion that nostalgia mostly arises from personal memories for specific events. As the opening examples in this introduction make clear, consumers often feel nostalgic for entire periods of time (e.g., college years, or the 1950s). Furthermore, marketers often appeal to nostalgia for collective time periods that their target audience likely did not personally experience. For example, it seems unlikely that Volkswagen is bringing back an electric version of their 1960s-era Minibus because they want to appeal to retirees in their 60s and 70s. Instead of centering nostalgia around a single personal past, I argue that we should conceptualize and measure nostalgia for specific time periods, especially in marketing contexts. Among providing other benefits, doing so can give us insights into why people might feel nostalgic for a time period in the first place. For example, does a 30-something Trump voter who

feels nostalgic for the 1950s feels that way because their values match with the values that predominated in the 1950s (e.g., stable manufacturing jobs, segregated businesses and neighborhoods), or because they have gotten more exposure to positive depictions of the 1950s (e.g., movies like *Grease* or shows like *Happy Days*)? When we can answer questions like these, then we can start to understand far more about when and why nostalgia arises in the first place, which makes our research far more useful and relevant to practitioners who rely on nostalgia in their work. Thus, in essay one I develop and validate a nostalgia scale that can be used to measure and study when and why people feel nostalgic for certain time periods over others.

In essay two, I challenge the notion that nostalgia persuades primarily because it is a positive emotion. First, recent evidence calls into question whether nostalgia is primarily a positive emotion at all. For example, recent work has shown that the most popular method for manipulating nostalgia—the event reflection task—may overestimate the extent to which nostalgia reduces loneliness and boosts perceived well-being (Newman et al. 2020; Newman and Sachs 2020). Second, even if nostalgia is a mostly positive emotion, it appears to involve a kind of deep cognitive reflection that other positive emotions do not (De Brigard 2019; Leboe and Ansons 2006; Waytz, Hershfield and Tamir 2015). Consequently, in essay two I argue that nostalgia is persuasive in part because it evokes reflective immersion, which occurs when reflection (e.g., on memories) is so vivid and realistic that it leads to deep immersion into a story or message, known as narrative transportation. This in turn shifts our framework for understanding how and when nostalgia makes marketing appeals more effective. For example, the findings in essay two suggest that nostalgia might be most effective when people have more time and cognitive resources with which to evaluate the advertisement or product, a fact that was not apparent when we thought that nostalgia persuades through positive emotions.

Social psychologists have only studied nostalgia in earnest since 2006. Experimental researchers have since given us useful insights into the consequences of nostalgia. Unfortunately, much of the work on nostalgia has been informed by a set of assumptions about what nostalgia is, how we experience nostalgia, and what we feel nostalgic for. We should take another look at those assumptions to make sure that they provide a complete picture of when, how, and why we experience nostalgia. These two essays are just the beginning of what I hope is a long-term re-examination of our core assumptions about this complex emotion.

ESSAY 1: THE NOSTALGIA SCALE

Introduction

Nostalgia saturates the marketplace. Consumers relive the past through renaissance festivals, Civil War re-enactments, Prohibition-era speakeasies, classic cars, vinyl record collections, and 1980s-style video arcades. Marketers capitalize on this nostalgia to sell products to consumers. In a 2019 Super Bowl advertisement, Pepsi took viewers on a trip to the 1970s and 1950s to show them the “Pepsi that your father drank and his father drank”, while Doritos gave a humorous nod to the baggy clothes and boy band craze of the 1990s. In addition to using nostalgia in advertisements, companies often release modern versions of products that allow their target audience to relive the past, as Volkswagen did when they launched the New Beetle in the 1990s to capitalize on nostalgia for the 1960s (Brown, Kozinets and Sherry Jr 2003). Similarly, popular shows like *Mad Men*, *Westworld*, *Downton Abbey*, *Stranger Things*, and *Boardwalk Empire* all rely on nostalgia to attract and entertain viewers.

Researchers define nostalgia as a sentimental longing for the past (Routledge et al. 2008; Wildschut et al. 2006; Zhou et al. 2012). As the examples above illustrate, the past can refer to a variety of times. This raises a strategic question: Which past should marketers portray in their nostalgic appeals? Should automobile manufacturers revive a car from the 1950s or the 1980s? Should advertisers evoke symbols from the 1960s counterculture or the turn-of-the-millennium boyband craze? Should a bar adopt the décor of a 1950s Americana-themed diner or a 1980s neon-laden arcade? Should a television producer invest in a show set in Victorian England or Ancient Rome?

In theory, it would make sense for marketers to evoke the past that their target consumers feel most nostalgic towards. Some consumers buy classic cars and vote for politicians based on

their nostalgia for the 1950s; others go to arcade bars and watch *Stranger Things* based on their nostalgia for the 1980s; and still others attend western-style theme parks and rodeos based on their nostalgia for the Old West. In practice, however, marketers do not have the tools to figure out which past evokes sentimental longing in their customers. The literature offers scales to measure the extent to which consumers experience nostalgia for their childhood (Batcho 1995) and for the past in general (Holbrook and Schindler 1996; Huang, Huang and Wyer 2016; Routledge et al. 2008). But existing scales do not assess the extent to which a consumer (or group of consumers) are nostalgic for a specific time period, such as the 1960s or the 1990s.

We thus created the Nostalgia Scale, which measures nostalgia people feel towards specific time periods, using a rigorous scale development procedure (Churchill 1979; MacKenzie, Podsakoff, and Podsakoff 2011; Rossiter 2002). By doing so, we make three theoretical contributions. First, we develop integral nostalgia as a distinct and valuable construct. Quantitative research has either treated nostalgia as a stable individual difference (i.e., nostalgia proneness) or as a state emotion with incidental effects (i.e., the consequences of feeling nostalgic). Second, this research helps to bridge the gap between psychological and sociocultural research on nostalgia. Whereas psychological research has largely studied the emotional properties and consequences of personal nostalgia, sociocultural research has focused on how societies and cultures can develop and evoke nostalgic collective memories. By developing a scale to measure the integral nostalgia that consumers feel for different times, our research highlights the overlap between personal and cultural nostalgia and opens the door for psychological research that studies the nostalgia that consumers feel towards a shared past (i.e., cultural nostalgia). Third, developing and validating the Nostalgia Scale will help consumer researchers test new hypotheses about the antecedents and consequences of nostalgia. Research

has explored the causes and consequences of feeling nostalgia generally, but it has not investigated why consumers feel nostalgic for some times but not others, nor has it examined how feeling nostalgic for a time influences judgments and decisions related to that time.

Here is a preview of how we developed the Nostalgia Scale. In the first section of the paper, we review the literature and conduct qualitative research to derive a definition of integral nostalgia that specifies its scope and its three dimensions: warmth, loss, and simplicity. We then develop a set of scale items to capture the dimensions of nostalgia and conduct two studies to purify the scale (studies 1a & 1b). Next, we assess the scale's validity by testing how it responds when we manipulate integral nostalgia (study 2). We then test the usefulness of the Nostalgia Scale by showing that it predicts both how consumers respond to nostalgic advertisements (study 3) and make real choices (study 4). Finally, we show how researchers can use the Nostalgia Scale to provide meaningful theoretical insights into nostalgia by placing it in a nomological network with four related constructs (study 5). Specifically, we find that consumers are more nostalgic for a time period when they have a more accessible schema (i.e., a cohesive set of associations and memories) for the period and when they associate the period with the same values that they currently hold. Furthermore, we find that feeling nostalgic for a time period leads consumers to consider the time to be more sacred and makes them hold more favorable attitudes towards products associated with that time. We conclude by discussing how firms can use the Nostalgia Scale to implement more effective marketing strategy and how scholars can use the scale to conduct more meaningful consumer research.

Conceptualizing Nostalgia

Nostalgia is a complex, mixed emotion involving a sentimental, bittersweet longing for the past (Casey 1987; Davis 1979; van Tilburg, Wildschut and Sedikides 2018; Wildschut et al.

2006). Researchers have operationalized two aspects of this definition—the nostalgic past and nostalgia’s role as an emotion—in different ways. Before we can begin to conceptualize nostalgia, we need to discuss the different ways that the literature has operationalized this construct in order to identify which of these approaches will best help researchers measure the nostalgia that consumers feel for different time periods.

Nostalgia for “The Past”

When consumers experience nostalgia, they feel a sentimental longing for the past. Consumers cannot directly perceive the past, but they can and do construct mental representations of different time periods by creating schemata—or abstract networks of associations—that represent what each time period was like (Bartlett 1932; Oldfield 1954). A consumer’s schema for a time period depends both on what she remembers from living through that time (i.e., autobiographical memories; (Conway 1997) and on what she has read, seen, or heard from others about the time (i.e., collective memories; (Beim 2007; Halbwachs 1992; Schuman, Belli and Bischooping 1997). Consumers can thus develop schemata—and feel nostalgic—for time periods that they personally, collectively, and vicariously experienced.

Most of the research on nostalgia focuses on personal nostalgia, or the sentimental longing that people feel for a past time in their own life (Hepper et al. 2012; Lasaleta and Loveland 2019; Lasaleta, Sedikides and Vohs 2014; Routledge et al. 2008; Sedikides et al. 2015; Wildschut et al. 2006; Zhou et al. 2012). Consumers can feel nostalgic not only for a specific event—such as their first kiss—but also for a schema that represents a bigger chunk of their lives—such as their childhood or senior year in High School. Consistent with the finding that consumers feel nostalgic for their autobiographical past, researchers regularly attempt to evoke nostalgia using an “event reflection task,” which asks participants to “think of a nostalgic event

in your life—a nostalgic event that has *personal meaning* for you” (emphasis added; Wildschut et al. 2006).

Consumers can also feel nostalgic for a schema built on collective memories (Brunk, Giesler and Hartmann 2018; Holak and Havlena 1998; Thompson and Tian 2008). Collective memories are shared between and among members of a culture in the form of photographs, articles, music, movies, television shows, documentaries, and personal stories (Conway 1997; Schuman et al. 1997; Schuman and Scott 1989). For example, an American consumer’s schema of the 1990s will depend not only on her personal memories of the 1990s (e.g., family vacations, 1st grade, and playing in the park), but also on the way that the decade is portrayed in shows like *Friends*, movies like *Reality Bites*, and Facebook groups like *I Love the 90s*. Thus, just as consumers can feel nostalgic for time periods in their personal past (i.e., personal nostalgia), they can also feel nostalgic for time periods in the past that they share with other members of their culture (Bellelli and Amatulli 1997; Holak and Havlena 1998; Holak, Matveev and Havlena 2007; Wildschut et al. 2014).

Interestingly, research suggests that consumers can even feel nostalgia for a collective past that they experienced only vicariously (Brunk et al. 2018; Goulding 2001; Halbwachs 1992; Hartmann and Brunk 2019; Holak et al. 2007; Peñaloza 2001; Rethmann 2009). For example, attendees at the National Western stock show and rodeo feel nostalgia for the Old West (Peñaloza 2001), readers of magazines that glorify southern tradition feel nostalgia for the antebellum American South (Thompson and Tian 2008), and 21st Century Russian youths feel nostalgia for the Soviet era (Holak et al. 2007). Vicarious nostalgia is a subset of cultural nostalgia in which consumers form schemata to represent past times that they experience exclusively through stories, photographs, films, and other cultural artifacts depicting a time that

they did not experience first-hand (Brunk et al. 2018; Schuman et al. 1997). If consumers read enough novels and watch enough movies about the Old West, they will form detailed and emotionally evocative schemata representing this time period. In this way, even consumers who were not alive during a time period can nonetheless form a vivid mental representation of it that can evoke nostalgia. Just as reading a story about meeting Bugs Bunny at Disneyland can cause consumers to form a vivid (yet false) memory of seeing Bugs at the Disney theme park (Braun-LaTour et al. 2004), attending a reenactment of the 1881 shootout at the O.K. Corral can cause consumers to create a vivid schema of the Old West (Beim 2007; Peñaloza 2000).

Although the literature gives different labels to personal, cultural, and vicarious nostalgia, research on memory suggests that consumers construct their mental representations of the past in much the same way, regardless of whether a person actually lived through the time or imagined it with the help of photographs, stories, television, movies, products, or advertisements (Braun 1999; Garry et al. 1996; Lindsay et al. 2004; Loftus and Pickrell 1995). Moreover, in the marketplace, consumers appear to be attracted to products that evoke nostalgia regardless of whether the nostalgia is for a personal, cultural, or vicarious mental representation. Facebook's timeline helps consumers relive personal events from the past, *Stranger Things* helps Generation Xers revisit music, fashion, and technologies from the 1980s, and record players help Millennials revisit a past that they know only from story and song. Thus, our goal is to develop a measure that is flexible enough to assess nostalgia for the full range of personal, cultural, and vicarious time periods that potentially evoke sentimental longing in consumers.

Nostalgia as an Emotion

Recall that nostalgia refers to a *sentimental longing for the past*. Just as there are different ways to conceptualize *the past*, there are also different ways to conceptualize *sentimental*

longing. Sentimental longing is an emotion. Researchers have three ways to operationalize emotions, including nostalgia: as an individual difference, as having incidental effects, or as having integral effects. We briefly discuss each of these in order to situate our research within the literature and explain the approach that we use to operationalize nostalgia.

Nostalgia proneness. Some people chronically experience more of an emotion than others. Just as some people tend to be more happy or angry or afraid, some are more prone to experience nostalgia. Several researchers have measured nostalgia as an individual difference (i.e., nostalgia proneness) by assessing how nostalgic someone feels for the past, on average (Batcho 1995; Holak et al. 2005; Holbrook 1993; Juhl et al. 2010, 2020; Smeekes et al. 2015). Operationalizing nostalgia as an individual difference has revealed useful insights about consumers. For example, we know that people who are more nostalgia prone tend to prefer products that were popular earlier in their life (Holbrook and Schindler 1996). Measuring individual differences in nostalgia proneness, however, yields a single nostalgia proneness score for each consumer. Thus, differences in nostalgia proneness cannot assess if a consumer—or group of consumers—is more nostalgic for one time period compared to another. For example, proneness measures cannot help marketers figure out whether their target customers are more nostalgic for the 1960s, 1990s, or the Old West. Just as a therapist treating chronic fear needs to determine the specific situations that generate fear, marketers using nostalgic appeals need to understand the specific time periods that generate nostalgia. This will require a different way to operationalize nostalgia.

Incidental Nostalgia. A second way to operationalize emotions, including nostalgia, is incidentally. Incidental emotion refers to an emotion triggered by one stimulus that subsequently influences how a consumer responds to something unrelated to that stimulus (Lerner, Han and

Keltner 2007; Pham 2007). For example, teenagers leaving the movie theater will feel more scared by wind rustling through the bushes after watching *The Texas Chainsaw Massacre* than after watching *Toy Story*, because the incidental fear from the scary movie influences their reaction to the unrelated sound. Researchers have made important contributions by operationalizing nostalgia as an incidental emotion (Routledge et al. 2008; Stephan, Sedikides and Wildschut 2012; Zhou et al. 2008). For example, after writing about a nostalgic personal memory, consumers tend to feel more connected to other people (Cheung et al. 2013; Routledge et al. 2011; Wildschut et al. 2010), which reduces the extent to which they value money (Lasaleta et al. 2014) and encourages them to donate more of it (Zhou et al. 2012). When experimenters incidentally manipulate nostalgia, participants also become more patient (Huang et al. 2016), report a greater sense that their life has meaning (Routledge et al. 2011), and feel more authentic (Lasaleta and Loveland 2019). Operationalizing nostalgia as an incidental emotion is an excellent way to study the consequences of feeling nostalgia generally, but it does not help marketers determine which time periods to evoke in their nostalgic appeals.

Integral Nostalgia. A third way to operationalize emotions, including nostalgia, is to assess their integral effects. In addition to incidentally influencing unrelated judgments and decisions, emotions directly influence the way that people respond to the person, product, object, or place that evokes the emotion (Han, Lerner and Keltner 2007; Pham 2007). Just as a fear of heights can prevent Bill from stepping on an airplane, nostalgia for the 1960s can lead him to enjoy watching *Taking Woodstock*, *Mad Men*, and CNN's *The Sixties*. Integral emotion influences consumers' judgments, including who they vote for (Abelson et al. 1982), how they respond to advertisements (Holbrook and Batra 1987), and whether they are satisfied with a recent purchase (Westbrook and Oliver 1991).

Marketers care about which time periods elicit nostalgia, because nostalgia for a time period will likely influence how consumers respond to products and advertisements that evoke that time. Researchers have taken steps towards measuring nostalgia as an integral emotion, either by assessing nostalgia for specific advertisements (Merchant and Rose 2013; Pascal, Sprott and Muehling 2002) or observing consumers' choice of nostalgic retro-branded products (Lasaleta and Loveland 2019; Loveland, Smeesters and Mandel 2010). These measures were appropriate for their respective studies, but they are not broad enough (nor were they intended to be) to measure the nostalgia that consumers feel for an entire time period. In order to offer marketers a tool to help them decide which time periods to evoke in their products and communications, we next develop a scale that can measure the nostalgia that consumers feel for any time period, regardless of whether consumers remember the time personally, collectively, or vicariously.

Dimensions of Integral Nostalgia

Nostalgia is a complex, multi-dimensional emotion. We combined three methods to identify the dimensions that reflect the nostalgia that people feel for different past times. First, we read popular press articles about topics ranging from nostalgic product releases (e.g., the 40th anniversary reboot of the Sony Walkman) to nostalgic fashion trends (e.g., the reemergence of 90s-style jelly nails) from a variety of outlets, including Vanity Fair (Robinson 2019), Forbes (Bandoim 2019), Salon (Stevens 2019), and NPR (Harris 2018). Second, we conducted an extensive literature review, integrating findings and ideas from psychology, philosophy, marketing, sociology, anthropology, and journalism. Third, we conducted and content analyzed an essay study, in which we collected both personal and cultural nostalgic memories from 202 MTurk participants (51.5% female; $M_{Age} = 35.57$; details in Appendix A). This research helped

us identify three dimensions that reflect integral nostalgia for a time period: warm feelings for the time, feelings of loss associated with the time, and an idealized view of the time as being simple and pure.

Warmth

Warm feelings toward the past are a defining feature of nostalgia (Holak and Havlena 1998). Formally, we define warmth as *a feeling of happiness and affection sparked by thinking about the time period*. Despite not being born until the 1980s, one respondent in our essay study expressed warm feelings for the 1960s: “It seems like such a time of freedom and joy where people interacted with each other more and spent time learn (sic) about each other.” Another respondent wrote of a family holiday tradition from her own past: “It would be very loud with laughing. I feel happy when I look back on those days and hope that I can keep this tradition for my family in the future.” The literature on nostalgia supports the notion that warmth is a key dimension of nostalgia. When survey respondents describe nostalgic memories, they regularly describe warm sentiments such as enjoyment, fondness, and laughter (Hepper et al. 2012; Wildschut et al. 2006), and studies have found that nostalgia correlates with positive emotions like enthusiasm (Zhou et al. 2012), happiness (Sedikides et al. 2018), optimism (Cheung et al. 2013), and tenderness (Holak and Havlena 1998). Scales that measure nostalgia proneness contain positive statements like “Happy memories of good times spring readily to mind” (Routledge et al. 2008) or ask respondents to describe how warm, pleasant, and relaxed they feel (Merchant et al. 2013). Research in consumer culture theory likewise shows that people view the nostalgic past as virtuous and celebratory (Brunk et al. 2018), optimistic (Brown et al. 2003), and full of “comforting visions of abundance, splendor, decorum, and social tranquility” (Thompson and Tian 2008, 600).

Loss

A second defining feature of nostalgia is a sense of loss or inability to return to the previous time (Brunk et al. 2018; Hartmann and Brunk 2019; Holak and Havlena 1998; May 2017; Wildschut et al. 2006). Formally, we define loss as *a negative feeling someone experiences when something they once cherished is gone, never to return*. With nostalgia, the source of this feeling can vary from person to person. One respondent summed up these feelings of loss when describing her youth in the 1970s: “Oh, to be back in those days. There's nothing I've gained since that makes up for what I lost since then.” Another expressed nostalgia for the lost freedoms of the 1960s, before he was born: “I would love to have [gone] to all those music festivals, and would love to live that period, because people were very free, much more than we are today.” The literature echoes the notion that loss is a key dimension of nostalgia. The word “longing” is used to define nostalgia, and nostalgia proneness scales sometimes contain an element of sadness (Holbrook and Schindler 1994; Routledge et al. 2008). For example, Holbrook’s scale (1993) has an item that focuses specifically on the loss of something dear: “The truly great sports heroes are long dead and gone”. Batcho’s scale (1995) exclusively measures the extent to which people miss aspects of their past (e.g., their house, their school). Consumer culture theory researchers have shown that consumers look back on the nostalgic past with feelings of loss, usually of some set of values or ideals (Brunk et al. 2018; Goulding 1999; Hartmann and Brunk 2019; Thompson and Tian 2008). For example, Peñaloza (2000, 97) quotes a rancher at the National Western Stock Show and Rodeo who said: “The show is as close [to the West] as [visitors] will get. Here, they get to associate and reminisce about what no longer is and will never be again.” Holak et al. (2007) found that nostalgia for the Soviet era leads many Russians to lament the loss of cultural experiences, such as a community in which everyone was cared for. Although some studies

suggest that nostalgia generates more positive than negative feelings (Hepper et al. 2012; Wildschut et al. 2006), others find that loss and positive emotions like elation and tenderness are equally present in nostalgic memories (Holak and Havlena 1998).

Simplicity

A third defining feature of nostalgia is an idealized view of the past as being simpler, less chaotic, or otherwise less stressful than the present. We call this dimension simplicity, and we define it as *the impression that the time seems natural, easy to understand, and easy to function within*. The simplicity dimension captures the extent to which consumers tend to idealize time periods that evoke nostalgia. Respondents in our essay study wrote about how much simpler life was in their nostalgic recollections. One respondent wrote of the 1990s, “Homes were affordable. It was a must [sic] more simple time, a time before social media.” Another described the 1920s similarly: “It was easier for people to become successful during that time. They lived simply and happily.” The literature provides additional evidence that nostalgia involves a sense that the past was simpler than the present. One study measuring the nostalgia an ad triggers contains an item about simplicity: “I imagined I was there in the simple and pure times shown in the ad” (Merchant and Rose 2013), while a similar scale asks respondents to list how peaceful and calm they feel after watching a nostalgic ad (Merchant et al. 2013). The consumer culture theory literature similarly documents how consumers describe the nostalgic past as being less complicated. For example, consumers at a rodeo describe the Old West as “a simpler time when [people] knew their neighbors, never locked their doors, and helped each other out” (Peñaloza 2001, 388), while consumers in Germany expressed a desire to return to the simpler, down-to-earth lifestyle of socialist East Germany (Brunk et al. 2018, 1337). Importantly, the impression that the past was simpler is subjective; nostalgic consumers may believe that a time was simpler

regardless of whether objective evidence is consistent with this belief (Hartmann and Brunk 2019; Thompson and Tian 2008).

Method

Based on our qualitative research and review of the literature, we operationalize nostalgia as having three dimensions: warmth, loss, and simplicity. Because we conceptualize nostalgia as necessarily involving (i.e., causing) these three dimensions, we developed the measure as a reflective scale (MacKenzie et al. 2011). We conducted six quantitative studies to validate a three-dimensional Nostalgia Scale. Studies 1a and 1b identify and refine eleven items to measure the three dimensions. Study 2 validates the scale by manipulating integral nostalgia. Studies 3 and 4 show that the Nostalgia Scale predicts which consumers respond favorably to nostalgic advertisements and products, respectively. Finally, study 5 uses the scale to situate integral nostalgia within a larger nomological network of related constructs.

Study 1 – Developing, Purifying, and Refining Items

We developed an initial list of 33 scale items intended to measure the extent to which a time period evokes warmth, loss, and simplicity. Following the content validity procedure advocated by Mackenzie et al. (2011), two colleagues with expertise in emotions and collective memories helped us revise the scale by identifying items that (a) did not clearly reflect nostalgia, (b) did not reflect the component dimensions that it was intended to measure, or (c) had too much overlap with other items. This process helped us revise the initial list to 28 items, which we further refined to a final scale of 11 items using exploratory factor analysis (EFA) in study 1a and confirmatory factor analysis (CFA) in study 1b (we detail the item purification process in Appendix B). To test the generality of the scale, we asked participants to evaluate their

childhood, the 1980s, and the Old West (study 1b only)—time periods that, respectively, could evoke personal, cultural, and vicarious nostalgia.

Study 1a Method

We recruited 366 undergraduate students to complete the study in exchange for course credit ($M_{\text{Age}} = 19.57$; 44.1% female). After passing a reading check, participants responded to 28 integral nostalgia scale items for two different time periods: the 1980s and their childhood. We counterbalanced the order of the two scales. Before each scale, we asked participants to take a few moments to think about what things were like during the time period in question. Participants next reported their impression of the time period on the 28 items. The items used seven-point Likert scales (1 = Strongly Disagree; 7 = Strongly Agree) and were presented in a random sequence. Participants also responded to attention checks (e.g., “Please select ‘Agree’ for this question”) that we embedded within the scale items. In this and all subsequent studies, we eliminated participants who failed an attention check ($N = 34$) before analyzing the data.

Finally, we tested whether our items were measuring nostalgia by asking participants to complete a two-item measure of nostalgia for each time period, a form of convergent validity that scale development papers recommend (Churchill 1979; MacKenzie et al. 2011). We adapted these two items from a common manipulation check used in prior research (Wildschut et al. 2006): “I am nostalgic for [the 1980s/my childhood]”, and “I have nostalgic feelings toward [the 1980s/my childhood]”; 1 = Strongly Disagree, 7 = Strongly Agree). We averaged the two simple 1980s nostalgia items ($\alpha = .93$) and the two simple Childhood nostalgia items ($\alpha = .84$).

Study 1a Results

In order to purify and refine the Nostalgia Scale, we conducted an exploratory factor analysis (EFA) with Varimax rotation for each time period separately. We extracted three factors and eliminated all of the items that did not load highly on to their intended dimension ($\beta_s < .60$) or that cross-loaded on to another dimension ($\beta_s > .40$) for either time period. In order to make the length of the scale more manageable (Rammstedt and Beierlein 2014), we further removed four additional items that had lower factor loadings than the other items. We were left with 12 items, four assessing each dimension.

When we averaged these 12 items for each time period, we found that the 1980s Nostalgia Scale ($\alpha = .87$) correlated significantly with the simple 1980s nostalgia measure ($r = .59, p < .001$), whereas the childhood Nostalgia Scale ($\alpha = .86$) correlated with the simple childhood nostalgia measure ($r = .59, p < .001$). Consistent with our assertion that consumers who feel nostalgic for one time might not feel nostalgic for a different time, the 1980s Nostalgia Scale did not correlate with the simple childhood nostalgia measure ($r = .008, p = .884$) nor did the childhood Nostalgia Scale correlate with the simple 1980s nostalgia measure ($r = .025, p = .652$). Our two Nostalgia Scales were weakly correlated with one another ($r = .134, p = .016$).

TABLE 1
STUDY 1A: EFA RESULTS

<i>M</i> (SD)	Item	Rotated factor loadings					
		Warmth		Loss		Simplicity	
		Childhood	1980s	Childhood	1980s	Childhood	1980s
5.60 (1.30)	I associate this time with mostly positive things.	.82	.80				
5.72 (1.23)	I think happy thoughts when I think of this time.	.86	.84			.30	
5.68 (1.26)	Thinking about this time makes me happy	.85	.86				
5.65 (1.28)	Thinking about this time makes me feel good	.84	.82				
3.72 (1.70)	When I think about this time it makes me sad about the present.			.84	.77		
3.57 (1.60)	I would give anything to return to the way we were then.			.73	.75		
4.25 (1.59)	I'm sad things are no longer like they were then.		.33	.75	.77		
3.51 (1.53)	I feel a sense of loss when I think about this time.			.76	.71		
5.13 (1.60)	There was less chaos back then.					.73	.70
5.67 (1.46)	This time was less stressful.	.31				.67	.73
5.66 (1.43)	Life was less complicated during this time					.68	.78
5.43 (1.50)	Life was less hectic back then					.77	.74

NOTE.--Values drawn from full 28-item EFA. Eliminated items and factor loadings below .30 are omitted. We dropped one additional item ("I feel a sense of loss when I think about this time") in study 1b.

Study 1b Method

We recruited 250 participants from MTurk ($N = 242$ after attention checks; $M_{\text{Age}} = 35.62$; 44.2% female) to complete a study that used the same procedure as study 1a, but with three changes. First, we included only the 12 items that we refined from the original EFA. Second, we measured nostalgia for a third time period, the Old West, in addition to the 1980s and childhood. Finally, we included two popular nostalgia proneness scales to compare with our own scale: the Batcho Nostalgia Inventory (1995) and the Holbrook Nostalgia Scale (1993). The Batcho Nostalgia Inventory asks participants to indicate the degree to which they miss 20 aspects of their personal past (e.g., family, friends, holidays, school; 1 = Not at all, 5 = Very much). The Holbrook Nostalgia Scale measures the general nostalgia that participants feel for the technology, economy, and society of the past using eight items (e.g., "Things used to be better in the good old days"; "History involves a steady decline in human welfare"; 1 = Strongly Disagree, 7 = Strongly Agree). Because research has shown that reverse-coded scale items can

reduce the reliability of a scale and lead to unusual factor structures (Swain, Weathers and Niedrich 2008), we reworded the reverse-coded items in the Holbrook scale so that positive answers on all scale items would indicate more nostalgia. Otherwise, we left both scales unchanged from their original papers. We provide a full list of scale items in Appendix C.

Study 1b Results

In order to test the three-dimensional structure of the Nostalgia Scale, we used MPlus to conduct a multilevel confirmatory factor analysis (MCFA) on the measurement model illustrated in figure 1. The analysis revealed one item, “I feel a sense of loss when I think about this time,” that had a lower regression coefficient (.68) than the other items in the model. We decided to

TABLE 2
STUDY 1B: CORRELATION BETWEEN THE NOSTALGIA SCALE FOR THREE TIME PERIODS AND TWO EXISTING SCALES (**AVE FOR EACH SCALE IN BOLD**)

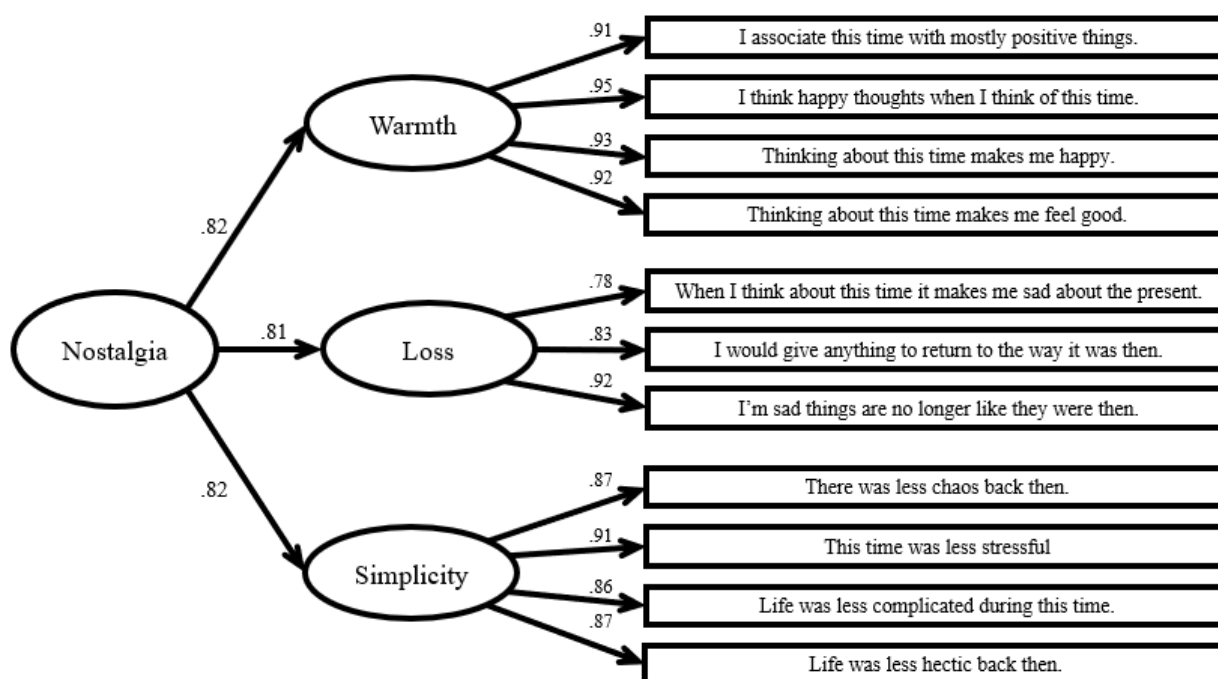
Construct	Cronbach's α	(a)	(b)	(c)	(d)
(a) Childhood Scale (.665)	.93				
(b) 1980's Scale (.662)	.94	.43***			
(c) Old West Scale (.650)	.92	.16*	.37***		
(d) Batcho Nostalgia Inventory	.92	.59***	.52***	.29***	
(e) Holbrook Scale	.90	.24***	.49***	.34***	.32***

* $p < .05$ *** $p < .001$

remove this item from all future studies and analyses. This left 11 items for the scale and measurement model: four reflecting Warmth, four reflecting Simplicity, and three reflecting Loss. Figure 1 shows the list of the final 11 items, including their CFA loadings for study 1b.

The MCFA indicated good fit for the scale measurement model: $\chi^2(41) = 90.83, p < .001$, CFI = .988, RMSEA = .041, SRMR = .027. Regression coefficients also showed that each dimension sufficiently explained its corresponding scale items, while the higher-order construct of integral nostalgia sufficiently explained each subordinate dimension (i.e., all of the standardized coefficients were above .70; see Figure 1). We estimated the same CFA model in subsequent studies in order to ensure that the results were replicable and robust (see Table 3).

Figure 1: Confirmatory Factor Analysis Results for Study 1b
Coefficients represent the average of factor loadings for nostalgia toward Childhood, the 1980's, and the Old West



Note. Factor loadings are standardized. Measurement errors were included in the model but omitted here. For a full list of results, including model fit statistics, see Table 2.

Finally, the integral nostalgia measure for all three time periods correlated with the two existing nostalgia scales (Table 2). The Batcho scale correlated most strongly with the childhood nostalgia scale ($r = .589, p < .001$), as we would expect based on the number of nostalgic childhood items it contains. The Holbrook scale correlated most strongly with our 1980s scale ($r = .493, p < .001$), which could be because both scales are tapping into a form of cultural

nostalgia. Importantly, however, the scales showed discriminant validity. We compared the correlations in table 2 with the average variance extracted (AVE) for the integral nostalgia scale for each time period (Fornell and Larcker 1981). This analysis confirmed that the integral nostalgia measure for all three time periods showed discriminant validity from (a) each other, (b) the Batcho scale, and (c) the Holbrook scale. We provide a full list of the correlations, Cronbach's alpha scores, and AVE values for the scales in Table 2.

Discussion

Results from studies 1a and 1b confirmed that our final 11-item scale is structurally valid. The scale items and dimensions are internally consistent with one another. Furthermore, the results demonstrate that the scale shows convergent validity with established nostalgia measures, as it correlates with existing scales measuring both simple nostalgia (study 1a) and nostalgia proneness (study 1b). Furthermore, the data from study 1b demonstrate that all three versions of the integral nostalgia scale exhibit discriminant validity both from each other and from existing nostalgia proneness scales. Our next study manipulates integral nostalgia to test whether the scale itself provides a valid measure of nostalgia, a technique recommended by scale development experts (MacKenzie et al. 2011).

TABLE 3
CFA MODEL COEFFICIENTS, MEANS, AND FIT STATISTICS

	Study 1b**			Study 2				Study 3	Study 4**		Study 5
	Childhood n = 242	1980s n = 242	Old West n = 242	Most Personal n = 119	Least Personal n = 116	Most Cultural n = 97	Least Cultural n = 119	1990s n = 171	1960s n = 191	1990s n = 191	1980s n = 429
Factor loadings											
Entire Scale Means	4.78	4.36	2.99	5.04	3.75	5.16	3.21	4.40	3.90	4.72	4.40
Warmth*	.81	.84	.81	.83	.84	.75	.83	.79	.86	.83	.82
I associate this time with mostly positive things.	.91	.91	.80	.81	.81	.84	.92	.75	.86	.81	.80
I think happy thoughts when I think of this time.	.94	.94	.89	.89	.94	.93	.94	.90	.89	.89	.86
Thinking about this time makes me happy.	.94	.93	.88	.92	.96	.82	.88	.91	.91	.89	.91
Thinking about this time makes me feel good.	.91	.93	.87	.84	.87	.69	.90	.83	.91	.93	.89
Warmth AVE	.86	.86	.74	.75	.80	.68	.83	.72	.80	.78	.75
Warmth Means	5.14	4.89	3.32	5.68	3.82	5.65	3.31	4.84	4.14	5.24	4.74
Loss*	.74	.77	.88	.59	.90	.57	.95	.74	.92	.81	.76
When I think about this time it makes me sad about the present.	.78	.84	.82	.72	.70	.72	.79	.72	.74	.80	.68
I would give anything to return to the way it was then.	.84	.84	.88	.74	.82	.73	.86	.80	.85	.85	.76
I'm sad things are no longer like they were then.	.91	.88	.83	.75	.86	.81	.80	.89	.91	.88	.88
I feel a sense of loss when I think about this time.	.54	.76	.63								
Loss AVE	.61	.69	.63	.54	.63	.57	.67	.65	.70	.71	.60
Loss Means	3.84	3.56	2.42	4.00	3.12	4.19	2.66	3.44	3.31	4.08	3.60
Simplicity*	.89	.83	.72	.68	.80	.85	.76	.79	.81	.86	.78
There was less chaos back then.	.85	.81	.86	.75	.87	.66	.89	.68	.76	.83	.79
This time was less stressful.	.91	.91	.83	.75	.77	.83	.88	.78	.92	.90	.82
Life was less complicated during this time.	.86	.91	.75	.83	.88	.73	.75	.77	.87	.88	.84
Life was less hectic back then.	.81	.88	.81	.85	.79	.63	.73	.72	.81	.84	.79
Simplicity AVE	.74	.77	.66	.63	.69	.51	.67	.55	.71	.74	.66
Simplicity Means	5.14	4.41	3.13	5.16	4.14	5.41	3.53	4.68	4.11	4.68	4.66
Model Fit											
Chi-square (df)		90.83 (41)		70.58 (43)	91.22 (43)	56.45 (43)	49.76 (43)	65.22 (43)		64.62 (41)	85.53 (43)
CFI		.99		.96	.96	.98	.99	.98		.99	.99
RMSEA		.041		.074	.099	.050	.037	.055		.039	.048
SRMR		.027		.074	.097	.067	.035	.046		.028	.047

*Bold numbers next to each subdimension represent that subdimension's loading onto the higher-order factor of Nostalgia.

**In studies 1b and 4, we asked the same participants to fill out the Nostalgia Scale for multiple time periods. We report the factor loadings and means for individual time periods, but the model fit statistics for all time periods together.

Study 2 – Manipulating Integral Nostalgia

We conducted study 2 to confirm that our scale measures nostalgia by directly manipulating integral nostalgia and testing if scores on the scale moved accordingly. Participants viewed a list of time periods, selected the time for which they felt either the most or least nostalgic, and completed the Nostalgia Scale for that time. We used a between-subjects design and manipulated whether participants filled out the scale for a cultural or personal time period to confirm that the Nostalgia Scale can measure differences in both personal and cultural nostalgia.

Method

We recruited 506 participants from MTurk for \$.50 ($N = 480$ after attention checks; $M_{Age} = 36.90$; 44.7% female). Participants were randomly assigned to condition in a 2 (level of nostalgia: high vs. low) x 2 (type of time period: cultural vs. personal) between-subjects design.

We first asked participants for their age and used their answer to customize the list of personal nostalgic time periods. We asked participants in the high nostalgia condition, “Which of the following time periods do you feel the most nostalgic about?” We asked participants in the low nostalgia condition which time they felt “the least nostalgic about.” Participants in the personal nostalgia condition saw a list of the following options: early childhood, mid-childhood, middle school/early teen years, high school/mid teen years, late teen years, your 20s (for those who were 30 or older), and your 30s (for those who were 40 or older). Participants in the cultural nostalgia condition saw a list containing the following options: Ancient Rome, Medieval Europe, the Old West, the 1950s, 1960s, 1970s, 1980s, 1990s, and 2000s. Participants next completed the Nostalgia Scale for the time period that they selected.

Results

An ANOVA revealed the predicted main effect of the high versus low nostalgia manipulation, such that those in the high nostalgia condition scored significantly higher on the Nostalgia Scale than those in the low nostalgia condition ($M_{\text{High_Nost}} = 5.10$, $M_{\text{Low_Nost}} = 3.48$; $F(1, 476) = 221.51$, $p < .001$, $\eta_p^2 = .318$). Unexpectedly, we found a larger difference between high and low nostalgia among participants in the cultural nostalgia conditions ($M_{\text{Cultural_High}} = 5.16$, $M_{\text{Cultural_Low}} = 3.21$; $t = 8.30$, $p < .001$) compared to participants in the personal nostalgia conditions ($M_{\text{Personal_High}} = 5.04$, $M_{\text{Personal_Low}} = 3.75$; $t = 12.80$, $p < .001$; interaction: $F(1, 476) = 9.19$, $p = .003$). Relatedly, participants also indicated marginally more nostalgia for personal rather than cultural time periods ($M_{\text{Personal_Nost}} = 4.40$, $M_{\text{Cultural_Nost}} = 4.22$; $F(1, 476) = 4.90$, $p = .06$, $\eta_p^2 = .007$). Although we predicted neither of these findings, they likely occurred because the “cultural nostalgia” condition included three time periods—Ancient Rome, Medieval Europe, and the Old West—from over a century before most of our participants were born, making it unlikely that these time periods would generate nostalgia for most people. 41% of participants chose one of these three periods in the “least cultural nostalgia” condition, compared to 3% in the “most cultural nostalgia” condition. When we excluded participants who chose these time periods, the main effect on nostalgia for the personal versus cultural manipulation went away ($F(1, 424) = .63$, $p = .427$), as did the interaction between the personal versus cultural and high versus low nostalgia manipulations ($F(1, 424) = .31$, $p = .576$).

We obtained similar results when testing the difference between high and low nostalgia for each dimension. These differences were significant regardless of whether participants evaluated a time from their personal past or a cultural period ($p < .001$ for all contrasts), although the difference in warmth, loss, and simplicity was consistently greater for those in the cultural condition (interaction p 's $< .06$). See Table 3 for the full list of means.

Discussion

Study 2 provides further evidence that the Nostalgia Scale reliably measures differences in the nostalgia evoked by different time periods. Furthermore, the results demonstrate that the scale captures these differences regardless of whether participants chose from a list of cultural or personal time periods, suggesting that the integral nostalgia scale is flexible enough to measure nostalgia for a variety of time periods, not just personal memories.

Study 3 – Predicting Who Responds Favorably to Nostalgic Ads

Our previous studies confirmed the construct validity of the Nostalgia Scale by showing that it has desirable measurement properties and responds to differences in integral nostalgia. Our next two studies return to the question that motivated our research by testing the predictive validity of the scale. One question managers need to answer is, “which time period should we evoke in nostalgic marketing communications?” We hypothesize that firms should evoke the time period that their target consumers feel the most nostalgia towards. For example, because the Nostalgia Scale can measure nostalgia for the 1990s, it can help managers predict which consumers will respond most positively to a nostalgic 1990s ad. In study 3, we tested whether the Nostalgia Scale can predict how consumers respond to nostalgic advertisements by examining whether participants who report more nostalgia for the 1990s respond more favorably to an advertisement evoking the 1990s. Specifically, we showed participants one of two print advertisements for eBay: a nostalgic 1990s version or a modern version. We predicted that participants’ nostalgia for the 1990s would predict their attitudes toward eBay after they viewed the 1990s ad, but not after they viewed the modern ad.

Method

We recruited 179 undergraduate students to participate in our study in exchange for credit in a marketing course ($N = 171$ after attention check; $M_{\text{Age}} = 21.31$; 50.9% female). We randomly assigned participants to view one of two advertisements (1990s vs modern).

The study included two parts: one in which participants filled out the Nostalgia Scale for the 1990s, and one in which they viewed and evaluated an advertisement. To clear participants' short-term memory and reduce the perceived connection between the two parts of the study, participants completed an unrelated task that lasted approximately 10 minutes between completing the Nostalgia Scale and viewing the ad. We also randomly assigned half of the participants to complete the scale items first and half to evaluate the ads first. The order of presentation had no main or interactive effects on any of our measures (all p -values $> .40$).

Figure 2: Advertisements Used in Study 3



**All the best things come
from the 90s**

ebay est. 1995

1990s Version



**All the best things today
can be found online**

ebay

Modern Version

Participants viewed one of two advertisements for eBay (see figure 2) either before or after they completed the filler study. The 1990s eBay ad featured a collage of pop culture icons from the 1990s; the modern eBay ad featured a collage of roughly equivalent pop culture icons from the late 2010s. After viewing the ad, participants answered, “What is your opinion of eBay, the brand from the ad you just saw?” on three items (7-point semantic differential; “Negative/Positive”, “I dislike it/I like it”, and “I’m not interested in it/I’m interested in it”; $\alpha = .92$). Next, participants completed a manipulation check by indicating their impression of the ad on two items (“It looks retro” and “It reminded me of the 1990s”; 1 = Strongly Disagree to 7 = Strongly Agree). Finally, as an exploratory measure, we used three items to measure participants’ familiarity with pop culture (“I know a lot about pop culture”, “I am interested in pop culture”, and “In general, I pay attention to the movies, music, celebrities and products that are popular”; 1 = Strongly Disagree to 7 = Strongly Agree; $\alpha = .90$). We included this measure to determine if the interaction between the integral nostalgia scale and the ad manipulation would emerge even when controlling for familiarity with pop culture. Participants filled out the Nostalgia Scale for the 1990s—either before or after evaluating the ads.

Results and Discussion

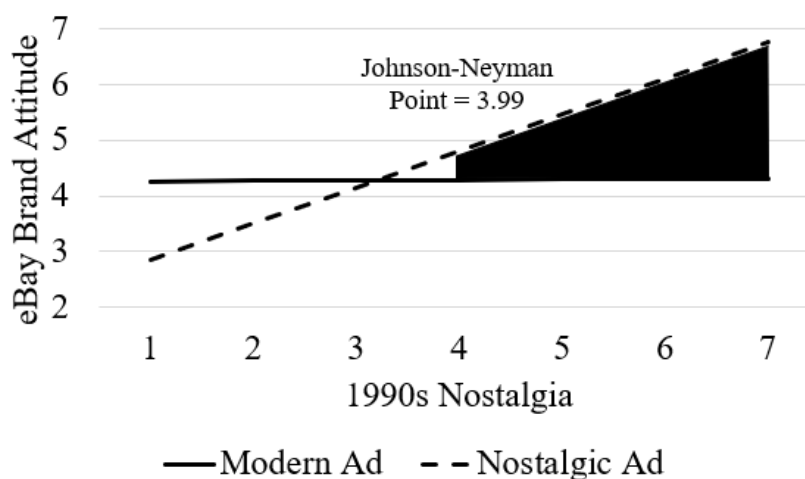
The ad manipulation worked as intended. Participants indicated that they thought the 1990s ad looked more retro ($M_{\text{Nost_Ad}} = 5.68$, $M_{\text{Modern_Ad}} = 3.63$; $F(1, 168) = 75.87$, $p < .001$, $\eta_p^2 = .311$), and more reminiscent of the 1990s ($M_{\text{Nost_Ad}} = 6.21$, $M_{\text{Modern_Ad}} = 3.25$; $F(1, 168) = 155.61$, $p < .001$, $\eta_p^2 = .479$).

To test whether the Nostalgia Scale predicted consumers’ reactions to the nostalgic advertisement, we tested the interaction between the ad manipulation and the extent to which participants were nostalgic for the 1990s, with brand attitudes as the dependent variable. We

found a significant interaction ($b = .91$, $SE = .22$, $p = .004$, $\eta_p^2 = .048$), such that 1990s nostalgia predicted attitudes toward eBay in the 1990s ad condition ($b = .469$, $t(77) = 4.63$, $p < .001$) but not in the modern ad condition ($b = .007$, $t(91) = .062$, $p = .951$). Participants who scored above 3.99—roughly the scale midpoint—on the 1990s Nostalgia Scale had a significantly more favorable attitude towards eBay after seeing the nostalgic compared to the contemporary ad; participants who scored below the scale midpoint had similar attitudes towards eBay, regardless of which ad they saw (see figure 3). The interaction remained significant when we included the *familiarity with pop culture* scale as a covariate ($b = .80$, $SE = .23$, $p = .013$, $\eta_p^2 = .037$).

This study demonstrates that managers can use the Nostalgia Scale to better predict how consumers respond to nostalgic advertisements. Knowing which time period consumers feel nostalgic for can help marketers design ads that are more likely to appeal to their target market. For example, if marketers designing a nostalgic appeal are trying to decide whether to reference the 1960s counterculture or the late-90s boyband craze, they can use the Nostalgia Scale to determine whether their target audience is more nostalgic for the 1960s or the 1990s.

Figure 3: Results of Study 3
Predicting Response to a Nostalgic Ad
Using the Nostalgia Scale



Study 4 – Predicting Which Nostalgic Products Consumers Choose

A similar question that managers might ask is, “which time periods should we evoke in our nostalgic products?” We hypothesize that the answer to this question is the same as the answer to the previous question: firms should evoke the time for which their target consumers feel the most nostalgic. Consequently, simply knowing how prone a consumer is to feel nostalgic for his personal past—or the past more generally—does not help marketers predict whether he will spend his Sunday afternoon watching *Taking Woodstock* or *Singles*, movies that transport viewers back to the late 60s and early 90s, respectively. The Nostalgia Scale, in contrast, could potentially help researchers predict which nostalgic products consumers will choose. To test whether the Nostalgia Scale can predict choice above and beyond existing measures of nostalgia proneness, we measured nostalgia for two time periods—the 1960s and 1990s—alongside the existing nostalgia proneness scales that we used in study 1b (Batcho 1995; Holbrook 1993). We then asked participants to choose a movie and a television trailer to watch from a list of both nostalgic and non-nostalgic titles. We predicted that participants who reported higher levels of nostalgia for the 1960s would be more likely to watch the trailers about the 1960s, whereas participants who reported higher levels of nostalgia for the 1990s would be more likely to watch trailers about the 1990s. Moreover, we predicted that the Nostalgia Scale for the matching time period would better predict participants’ choices than the other measures (both the general nostalgia proneness scales and also the nostalgia measure for the non-matching time).

Method

We recruited 222 participants from MTurk for \$1.00 ($N = 191$ after attention checks; $M_{\text{Age}} = 35.68$; 51.8% female). The study included two parts that were separated by an unrelated

filler study. In one part of the study, participants completed the Nostalgia Scale for the 1990s and 1960s along with the Batcho Nostalgia Inventory (Batcho 1995) and the Holbrook scale (Holbrook 1993). In the other part of the study, participants made a consequential choice between movie and TV trailers, some of which were nostalgic. As in study 3, we included a brief filler study between the two parts to clear participants' short-term memory and reduce the perceived connection between the two parts of the study.

Figure 4: Stimuli Used in Study 4



Singles shows what life was like for a group of young people living in Seattle at the height of the grunge movement in the 1990s.



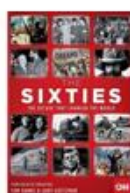
Taking Woodstock follows the lives and times of the people who unintentionally created the most iconic music festival of the 1960s.



Call Me By Your Name is a transcendent tale of two young men who discover the heady beauty of awakening desire over the course of a summer that will alter their lives forever.



American Honey is the story of Star, an adolescent girl from a troubled home, who runs away with a traveling sales crew that drives across the American Midwest selling subscriptions door to door.



The Sixties explores the landmark era of cultural, political, and technological change during the 1960s, transporting viewers into the decade that spawned the counterculture and the Summer of Love.



The Nineties explores the decade that gave us the Internet, DVDs, and the grunge movement, harkening viewers back to a golden age of television and movies.



In **Pod Save America**, podcast hosts Jon Favreau, Tommy Vietor, Dan Pfeiffer and Jon Lovett bring a “no bullsh*t conversation about politics” to the campaign trail in a four-part special.



United Shades of America follows comedian and political provocateur W. Kamau Bell as he explores communities across America to understand the unique challenges they face.

In the choice part of the study, participants chose products to consume later on in the session: a trailer for a TV series and a trailer for a movie. Participants first chose a trailer for a

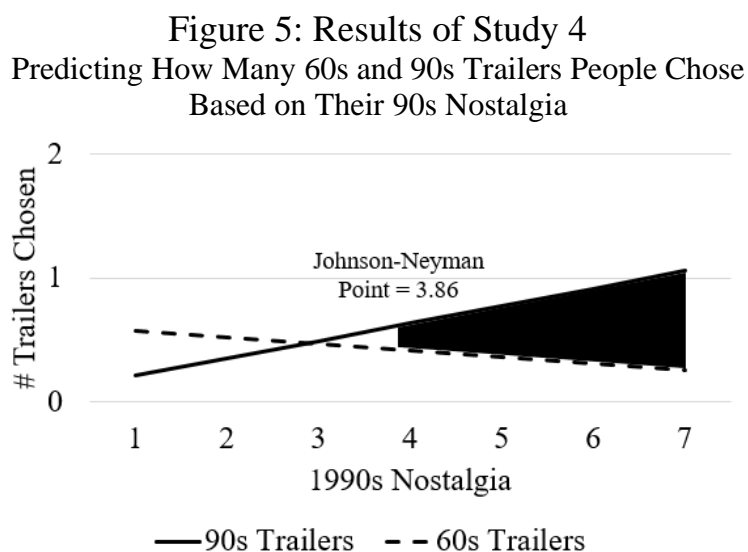
TV series from a choice set that included one documentary about the 1960s (CNN's *The Sixties*), one documentary about the 1990s (CNN's *The Nineties*), and two documentaries about the late 2010s, when the study was conducted (*Pod Save America* and *United Shades of America*). Participants next chose to watch a movie trailer from a choice set that included four coming-of-age movies: one set in the 1960s (*Taking Woodstock*), one set in the 1990s (*Singles*), and two set in the late 2010s (*American Honey* and *Call Me by Your Name*). We presented each option as a poster with the name and description of the show or movie (see figure 4 for the trailer stimuli and Appendix D for screenshots of the survey). Finally, participants watched both of the trailers that they selected.

Results and Discussion

We created “1960s nostalgic choice” and “1990s nostalgic choice” measures to count the number of movie and TV show trailers that participants chose to watch from each of these respective time periods: either 0, 1, or 2. We then regressed each of these dependent variables on all four of the scales—1960s nostalgia, 1990s nostalgia, the Batcho Nostalgia Inventory, and the Holbrook scale—using an ordinal logit model. Only the 1960s Nostalgia Scale significantly predicted which participants chose to watch TV and movie trailers about the 1960s (Wald's $\chi^2(1, N = 191) = 15.39, p < .001$). Similarly, only the 1990s Nostalgia Scale predicted which participants chose to watch the TV and movie trailers about the 1990s (Wald's $\chi^2(1, N = 191) = 6.65, p = .010$). Because the respondents in our sample were more nostalgic for the 1990s than the 1960s ($M_{1990s} = 4.72, SD = 1.27, M_{1960s} = 3.90, SD = 1.39; t(190) = 6.89, p < .001$), they were more likely to watch the trailers that evoke the 1990s than the 1960s ($M_{1990s} = .74, SD = .75,$

$M_{1960s} = .38, SD = .62; t(190) = 4.37, p < .001$). Importantly, however, as the floodlight analysis¹ in figure 5 illustrates, this was only the case for the 77.5% of participants who scored above a 3.86 on nostalgia for the 1990s. See table 4 for the regression coefficients in this study.

This study demonstrates two important points. First, it shows that marketers can benefit from knowing the extent to which consumers are nostalgic for a particular time period, because integral nostalgia predicts their preferences for products that are associated with that time period. For example, imagine Jim has decided to open a new bar and is trying to decide whether to make it a frontier style saloon evoking a John Wayne movie or a Prohibition-era speakeasy evoking 1920s Chicago. He could make this decision by measuring his target customers' nostalgia for the Old West and the 1920s in order to see which of these times triggers more nostalgia.



This study also provides additional evidence that consumers feel different levels of nostalgia for different time periods. Consequently, nostalgia for different time periods will lead people to behave in different ways. Nostalgia for the 1990s did not predict choice of 1960s-

¹ We used linear regression rather than an ordinal logit model to estimate the Johnson-Neyman point and the the floodlight analysis plots.

themed movie and TV trailers, just as nostalgia for the 1960s did not predict choice of 1990s-themed trailers. Likewise, we expect that consumers who are nostalgic for the Old West, for example, are less likely to go to a Prohibition-era speakeasy than consumers who are nostalgic for the 1920s. Thus, study 4 underscores the importance of having a scale that is capable of capturing the nostalgia consumers feel for specific time periods rather than the entire past.

TABLE 4
RESULTS OF STUDY 4

Scales	Choice of 1960s Products		Choice of 1990s Products	
	<i>Taking Woodstock</i>	<i>CNN's The Sixties</i>	<i>Singles</i>	<i>CNN's The Nineties</i>
Nostalgia Scale - 1960s		.683*		-.164
Nostalgia Scale - 1990s		-.278		.333*
Batcho Nostalgia Inventory		-.096		.278
Holbrook Nostalgia Scale		-.177		-.023

NOTE.-- All statistics shown are standardized coefficients from an ordinal logit model. *Significant at $p < .05$

Study 5 – Establishing a Nomological Network

We have thus far demonstrated that the Nostalgia Scale accounts for how consumers respond to nostalgic advertisements and products, which confirms the predictive validity of the scale and demonstrates its practical importance. Our final study demonstrates how researchers can use the scale to advance theory. Specifically, we tested whether the Nostalgia Scale can help researchers (a) identify why consumers feel nostalgic for one past era but not another, and (b) predict the theoretical consequences of a consumer's nostalgia for a specific time. Doing this allows us to place integral nostalgia within a network of related antecedents and consequences, demonstrating what is known as nomological validity (MacKenzie et al. 2011; Rossiter 2002).

Antecedents of Integral Nostalgia

There is a close link between emotions and the vividness of memories, such that emotional memories are more likely to be vividly remembered, and vivid memories are more likely to evoke stronger emotions (Heuer and Reisberg 1990; Holland and Kensinger 2010; Rubin and Kozin 1984; Webster and Gould 2007). Consequently, we expect that people feel more nostalgic for times for which they have stronger, more accessible cultural or personal schemata. If someone is not aware that the 1980s in the United States featured perms, bright colors, and music with heavy synth, and if they have never heard of movies like *Breakfast Club*, *Ferris Bueller's Day Off*, and *Footloose*, they probably will not feel much nostalgia for the 80s.

H₁: Consumers who have a more accessible schema for a time period will feel more nostalgia for that time period.

Furthermore, we predict that people feel more nostalgic for times with which their values most closely align. Nostalgia for both personal memories (Hepper et al. 2012) and cultural time periods (Brunk et al. 2018; Holak et al. 2007; Peñaloza 2001; Thompson and Tian 2008) is based in part on the social values that people held during that time period. For example, former citizens of East Germany and Russia feel nostalgic for the Soviet past because they greatly value the sense of community and belonging that they associate with this era (Brunk et al. 2018; Hartmann and Brunk 2019; Holak et al. 2007). Conversely, if someone's values do not align with the values associated with a time period, they should feel less nostalgic for it. For example, American consumers who are liberal and anti-materialistic should be less nostalgic for the 1980s, a time period associated with the conservative movement and "work hard, play hard" values, than for the late 1960s, a time period associated with the liberal, anti-materialistic counterculture.

H₂: Consumers whose personal values more closely align with the values associated with a time period will feel more nostalgia for that time period.

Consequences of Integral Nostalgia

Nostalgia leads us to view a past time as being separate, special, or distinct from other times (Hepper et al. 2012). Consumers avoid visiting places where nostalgic events took place, out of fear that they might spoil their cherished memory of that time (Zauberman, Ratner and Kim 2009). Other work suggests that consumers invest nostalgic memories and time periods with a sacred aura (Belk 1990; Belk, Wallendorf and Sherry 1989; Goulding 2001; Hartmann and Brunk 2019). If someone feels nostalgic for the early tea-party-patriot-founding-father days of the United States, they will tend to view this time period as being sacred and distinct from other times. Thus, we expect that nostalgia will lead people to consider a time to be more sacred.

H₃: Consumers who feel more nostalgia for a time period will perceive that time period to be more sacred.

People consume products that trigger nostalgia (Lasaleta and Loveland 2019; Loveland et al. 2010). Not only did we observe this in study 4, other work has shown that consumers high in nostalgia proneness are more likely to enjoy movies from their past (Holbrook 1993). Consequently, we expect that nostalgia for a time will lead to more positive attitudes toward music, TV, and other products that are associated with that time. If someone feels strong nostalgia for their childhood in the 70s, they likely still have strong positive attitudes toward TV shows like *Mr. Roger's Neighborhood*, *Sesame Street*, and *The Muppet Show*. Similarly, as we saw in study 4, consumers who feel nostalgic for the 1960s are more likely to watch *Taking Woodstock* and *The Sixties*, whereas consumers who feel nostalgic for the 1990s are more likely to watch *Singles* and *The Nineties*. We hypothesize that the choices we observed in the previous study reflect a broader preference that consumers have for products associated with times that make them feel nostalgic.

H₄: Consumers who feel more nostalgia for a time period will evaluate music, television, and other products associated with that time period more favorably.

Study Overview

We designed study 5 to test the relationships between the Nostalgia Scale and other constructs within a broader nomological network. We measured the following variables for the 1980s: nostalgia, schema accessibility, value alignment, perceived sacredness, and attitudes toward products. We then analyzed these constructs in a structural equation model to determine how they relate to each other in a nomological network.

Method

We recruited 451 participants from Prolific for a small payment ($N = 429$ after attention checks; $M_{\text{Age}} = 34.22$; 63.9% female). Participants started by filling out the Nostalgia Scale for the 1980s. They then filled out three items measuring the accessibility of their schema for the 1980s (“I have an idea of what things were like during this time”, “I can bring to mind vivid images of what life was like during this time”, and “It’s easy for me to think of this time”; 1 = Strongly Disagree; 7 = Strongly Agree). On the next page, participants filled out four items measuring the sacredness of the 1980s (“This time stands apart from other times in the past,” “This time is sacred to me,” “This time is special”, and “This time is significant”; 1 = Strongly Disagree; 7 = Strongly Agree). Next, participants indicated the extent to which their personal values overlap with the values associated with the 1980s using a measure that we adapted from the literature on organizational identification (Bergami and Bagozzi 2000; Sen and Bhattacharya 2001). Specifically, we showed participants the following prompt:

Everyone holds a set of values around things that they think are important and believe in. Additionally, different time periods are associated with different values. In this question, we want to know whether the values associated with the 1980s are similar or different than the values that you currently hold. Please indicate the degree to which your values match with those associated with the 1980s.


Participants then saw a scale that used overlapping circles to measure the extent to which each of the participants' values overlap with those of the 1980s (see figure 6).


Finally, participants filled out two items that measured their attitudes toward the entertainment (TV, movies, music) and consumer products associated with the 1980s.

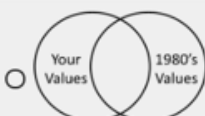
Participants first read, "We've asked you a lot of questions about the 1980s. Now we'd like to know a little more about your attitudes toward pop cultural products from this time. What is your attitude toward the following?" Then, they filled out the two items ("Entertainment (TV, movies, music) associated with the 1980s" and "Consumer products associated with the 1980s"; 1 = Strongly Negative; 7 = Strongly Positive).


Figure 6: Study 5 Measure of Overlap of Self and Values Associated with Past Time


Please indicate the degree to which your values match with those associated with the 1980's.

 My values are perfectly matched to the values associated with the 1980's.

 My values are mostly matched with the values associated with the 1980's, but there are some differences.

 My values are partially matched with the values associated with the 1980's.

 My values are mostly different from the values associated with the 1980's, but there are some similarities.

 My values are completely different from the values associated with the 1980's.

Results and Discussion

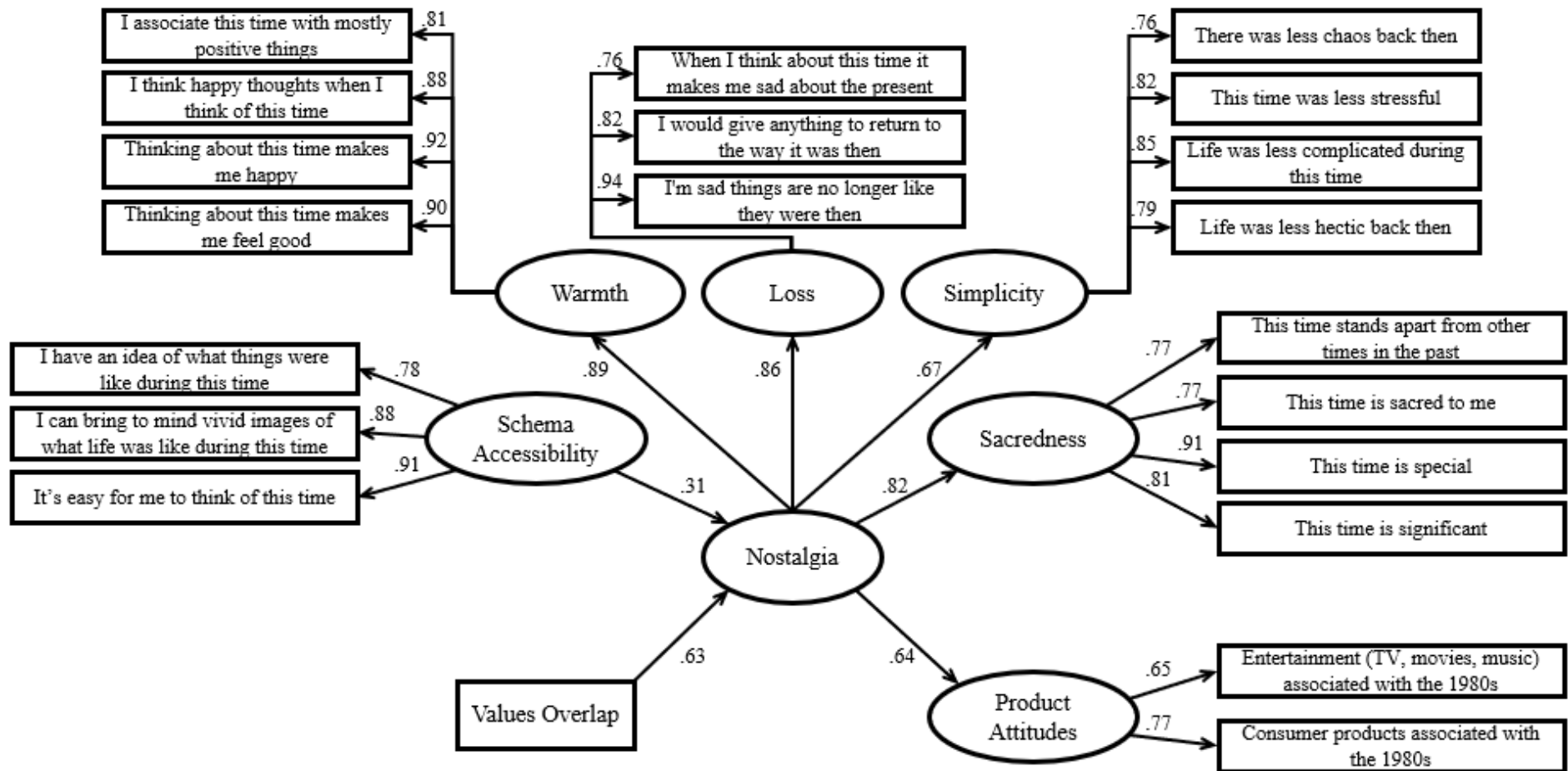
Before testing our hypotheses, we first confirmed the convergent and discriminant validity of the measurement model by calculating the average variance extracted (AVE) values for the measures of accessibility, sacredness, product attitudes, and each of the subdimensions of nostalgia. For all three subdimensions of nostalgia, the average variance extracted was higher than .60, indicating good convergent validity. These AVEs also met Fornell and Larcker's (1981) criterion for discriminant validity. In other words, the subdimensions of the Nostalgia Scale

showed discriminant validity both from each other and from the measures of schema accessibility, sacredness, and product attitudes.

We used Amos 25 to test the hypothesized structural equation model. We designated *schema accessibility* and *value overlap* as predictors of integral nostalgia, and *sacredness* and *product attitudes* as consequences of integral nostalgia. The estimated model fit the data reasonably well: GFI = .886, CFI = .927, and RMSEA = .072, with $\chi^2(184) = 589.27$, $p < .001$ (ratio between chi-square and the number of degrees of freedom = 3.20). As expected, participants who had a more accessible schema for the 1980s ($r = .555$, $p < .001$) and whose values overlapped more with the values associated with the 1980s ($r = .479$, $p < .001$) felt more nostalgic for the 1980s. In turn, participants who felt more nostalgia for the 1980s considered the 1980s more sacred ($r = .826$, $p < .001$) and reported more positive attitudes toward products from that time ($r = .510$, $p < .001$; see figure 7 for full model and standardized factor loadings).

Study 5 confirms the nomological network validity of the Nostalgia Scale and illustrates how researchers can use the scale to develop and test new hypotheses about nostalgia. Specifically, we found that schema accessibility of and values consistent with the 1980s led to greater nostalgia for the 1980s, which in turn led to more positive attitudes toward 80s products and a greater sense that the 1980s is sacred. The relationship between nostalgia and sacredness was especially strong. In fact, the items measuring sacredness were as closely related to nostalgia as the subdimensions of warmth, loss, and simplicity, which suggests that sacredness could possibly be a fourth subdimension of nostalgia. We encourage future research to investigate whether sacredness is better conceptualized as an essential feature of nostalgia or as a consequence of it.

Figure 7: Study 5 Factor Loadings



Note. Factor loadings are standardized. Measurement errors were included in the model but omitted here. All factor loadings listed in this figure are significant at $p < .05$.

General Discussion

Nostalgia is ubiquitous in the marketplace, yet consumers feel different amounts of nostalgia for different time periods. Across our studies, we found that the nostalgia that a consumer felt for one past time had at most a small correlation with the nostalgia they felt for a different time. This implies that one consumer might feel nostalgic for the 1950s but not the 1990s, whereas another might feel nostalgic for her college years but not her childhood. How can researchers measure nostalgia in a way that captures these important differences both between and within consumers? By measuring the nostalgia that consumers feel for any time period, our Nostalgia Scale fulfills this need.

Building on the literature as well as our own qualitative research, we conceptualize nostalgia as a reflective construct with three dimensions: warmth, loss, and simplicity. We developed an eleven-item scale to measure integral nostalgia and then tested the validity and usefulness of the Nostalgia Scale in a series of studies. Our initial studies tested the convergent validity of the Nostalgia Scale by showing that the items consistently measure the same dimensions and the same central construct (studies 1a and 1b), that consumers report higher scores on the scale when evaluating times towards which they felt more nostalgia (study 2), and that the scale correlates with both a simple measure of integral nostalgia (study 1a) and general measures of nostalgia proneness (study 1b). Our next two studies demonstrated the predictive validity and practical contribution of the Nostalgia Scale by showing that it predicts which consumers respond favorably to a nostalgic advertisement (study 3) and which consumers choose products associated with different past time periods (study 4). Our final study demonstrated the nomological validity and theoretical contribution of the Nostalgia Scale by showing how researchers can use the scale to better identify why consumers feel nostalgic for different time

periods and how this nostalgia influences consumers' judgments of the time and products associated with it (study 5). Importantly, the studies also demonstrated the discriminant validity of the Nostalgia Scale by showing that it is statistically distinct from existing nostalgia measures as well as other constructs in its nomological network (studies 1b, 4, and 5).

Managerial Implications

This paper offers three practical contributions. First, it provides a scale with which managers can design more effective nostalgic appeals and products. Merely knowing how nostalgic consumers are for the general past is not useful for predicting how they will respond to nostalgic ads or which nostalgic products they will purchase. Instead, managers need to determine which time period is most likely to evoke nostalgia in their target audience, so that they can design better ads and products. Studies 3 and 4 show that the Nostalgia Scale can serve such a purpose.

Second, we found that consumers feel more nostalgic for time periods that are more accessible. This implies that marketers can predict which time periods will trigger nostalgia among their target consumers by looking at which time periods are more prevalent in popular culture. For example, the recent popularity of shows like *Stranger Things*, movies like *IT*, and products like the Nintendo Classic all suggest that 1980s nostalgia is prevalent today.

Third, we found that nostalgia for a time period leads consumers to view that time period as sacred. When consumers consider an object sacred, they feel more involved with and loyal towards it (Belk et al. 1989) and they do not want to think about exchanging the object for money, which makes them less price sensitive (McGraw et al. 2016). However, trying to commercialize sacred products can also lead to moral outrage and a subsequent negative backlash (McGraw et al. 2012; McGraw and Tetlock 2005), which implies that marketers need to

be careful to adopt the correct cultural codes associated with a time period so they don't come across as crass, inauthentic, or even heretical (Holt 2002; Holt and Cameron 2010).

Theoretical Implications

Our research also makes three important theoretical contributions. First, it demonstrates that people can feel nostalgia for specific time periods rather than the past in general. Prior efforts to operationalize nostalgia outside of interpretive research have assumed that consumers chronically experience nostalgia for the past in general (nostalgia proneness measures) or that they temporarily experience nostalgia triggered by a specific personal memory (the event reflection task). We show that consumers feel different levels of nostalgia for different time periods. In study 1a, nostalgia for the 1980s and nostalgia for childhood only correlated weakly with one another ($r = .134, p = .016$), which reveals that young millennials who are vicariously nostalgic for the 1980s are not necessarily nostalgic for their 1990s childhood, nor vice versa. We conducted a replication of study 2 (details in Appendix E) that provides even stronger evidence that nostalgia varies more within consumers (comparing one time period to another) than between consumers (comparing the average nostalgia across time periods between one consumer and another). Participants in this study filled out the integral nostalgia for both their most and least nostalgic time periods, which they picked from the same list of personal time periods that we used in study 2. If consumers only experience nostalgia for the past in general, then we should observe that consumers report similar levels of nostalgia for different time periods (i.e., low within-subjects variance) but that they differ from one another in the extent to which they experience nostalgia across the average of both time periods (i.e., high between-subjects variance). We tested this expectation by calculating an intraclass correlation (ICC) score for the sample. The ICC was $-.282$, which indicates more variance in nostalgia ratings *within*

subjects than *between* subjects. In non-statistical terms, this means that consumers who are nostalgic for one time period are not necessarily nostalgic for another time, which implies that we are losing valuable information when we try to measure a consumer's nostalgia for the past in general. Measuring and studying nostalgia proneness can be useful in certain circumstances, but researchers cannot use nostalgia proneness scales to determine why certain time periods trigger nostalgia in certain people, nor can they use general nostalgia proneness measures to accurately predict relevant marketing outcomes like responses to advertisements, purchase intentions, brand attitudes, or product choice.

Second, this paper helps to bridge the abyss in the literature between psychological research—which has mostly focused on the psychological consequences of experiencing nostalgia—and sociocultural research—which has primarily focused on how societies or cultural forces shape the collective memories for which entire groups of people experience nostalgia. Researchers studying the psychological effects of nostalgia can gain a more holistic view of nostalgia by expanding the nostalgia construct to include nostalgia for collective and vicarious memories. The Nostalgia Scale will help them do this. Our scale also offers sociocultural researchers a more precise tool for testing processes and ideas excavated from ethnographic and historical analyses. By providing a scale that captures the breadth of nostalgia documented in previous sociocultural research (Belk et al. 1989; Brunk et al. 2018; Goulding 1999; Peñaloza 2001; Thompson and Tian 2008) with the precision of previous psychological research (Batcho 1995; Hepper et al. 2012; Wildschut et al. 2006), our research can help these previously disparate streams of research better speak to and learn from one another.

Third, the Nostalgia Scale gives researchers a means to test new hypotheses about the antecedents and consequences of nostalgia. The literature offers important insights about the

causes and consequences of nostalgia proneness (Batcho 2013; Holbrook 1993; Holbrook and Schindler 1994, 1996; Juhl et al. 2010, 2020; Merchant and Rose 2013; Wildschut et al. 2006; Zhou et al. 2008) and incidentally manipulated personal nostalgia (Cheung et al. 2013; Lasaleta and Loveland 2019; Lasaleta et al. 2014; Loveland et al. 2010; Routledge et al. 2011; Wildschut et al. 2010). But the literature offers little insight into why consumers are nostalgic for one time period rather than another nor into the consequences of feeling nostalgic for a particular time. Why are some consumers nostalgic for the 1990s or their college years, while others are nostalgic for the 1970s or their childhood? How does the behavior of consumers who are nostalgic for the 1990s differ from consumers who do not feel nostalgic for this decade? As we demonstrated in study 5, the Nostalgia Scale can help researchers discover new antecedents and build a more complete model for understanding when, why, and how consumers come to feel nostalgic for certain time periods over others as well as what consequences this integral nostalgia has on their behavior.

Limitations and Future Directions

All research is limited, and ours is no exception. However, these limitations provide opportunities that we hope can inspire future research. First, while we designed the Nostalgia Scale to be flexible enough to measure nostalgia for time periods (e.g., the 1970s) and the past in general, we did not specifically design it to measure nostalgia for single memories (e.g., a disco-themed 10th birthday party) or individual objects (e.g., a pair of old bellbottoms). However, we believe that practitioners and researchers alike could adapt the Nostalgia Scale to those purposes by slightly modifying it. Researchers could adapt several items by replacing “this time” with “this memory” or “this object”, but they might need to go further to adapt certain items from the loss and simplicity dimensions. For example, “I would give anything to return to the way it was

then” could become “I would give anything to return to the way it was when this memory took place” or “...the way it was when I used this product regularly.” Similarly, “This time was less stressful” could become “This memory occurred during a time when things were less stressful” or “This product makes me think of a time when things were less stressful.”

Second, we focus on measuring consumers’ nostalgia for particular times in the past; however, the schemata for past times are often associated with a particular place (Davis 1979; May 2017). For example, a hippie who is nostalgic for the late 1960s likely feels nostalgic for the 1960s in specific locations that she associates with the counterculture movement, such as San Francisco, Woodstock, or the desert commune where she crashed for a few years after the Merry Pranksters disbanded. This particular consumer probably would not feel nostalgia for the 1960s in small town middle-America, much less the 1960s in communist China. Analogously, Trump supporters who want to “Make America Great Again” are nostalgic for an idealized location in the past, typically a suburb or small town where jobs are plentiful, soda fountains flow freely, and everyone is white. Notably, sociocultural research has studied the nostalgia that consumers feel for a particular time *and* place, such as East Germany during its communist period (Brunk et al. 2018; Hartmann and Brunk 2019; Rethmann 2009), the American south during the antebellum period (Thompson and Tian 2008), or the American west during the 19th Century (Peñaloza 2001). We encourage researchers to use the Nostalgia Sale to further explore the role of place in consumers’ representations of the nostalgic past.

Third, we conceptualized the Nostalgia Scale as having reflective—rather than formative—indicators, because it met the criteria laid out by scale development literature (MacKenzie et al. 2011). Scales have at least three properties that make them reflective rather than formative: (1) the scale items all fit with a single theme, (2) the items and dimensions are

highly correlated, and (3) the dimensions and items are caused by the construct, rather than the other way around. All three of the scale items and dimensions we have identified—warmth, loss, and simplicity—measure thoughts and feelings toward a past time period, giving them a common theme. Furthermore, all of our dimensions were consistently correlated with one another throughout our studies (the dimensions loaded onto the higher-order construct of nostalgia by an average of .79 across studies; see table 1). Finally, we argue that our scale items and dimensions are the direct results of someone’s nostalgia for a time period. On this last point, however, we acknowledge that the direction of causality likely moves in both directions. A consumer who feels a sense of loss when she thinks about the 1990s is likely to feel more nostalgic for the 1990s as a result of those feelings of loss, just as her nostalgia for the 1990s causes her to miss that time more strongly. As scale development scholars have pointed out, determining the direction of causality between a construct and its indicators is difficult, and researchers can often measure the same constructs with both formative and reflective scales (MacKenzie et al. 2011). Future work could build upon our work and explore what the formative indicators of nostalgia might look like.

Fourth, we did not specifically discuss the link between the nostalgia triggered by specific products (e.g., the bellbottoms that trigger your 1970s nostalgia) and a fondness for vintage products (e.g., any antique clothing items from the past; Sarial-Abi et al. 2017). Sarial-Abi and colleagues—who define vintage products as “previously owned goods from an earlier era” (2017)—suggest that vintage products do not always trigger nostalgia, nor are vintage products necessary for someone to feel nostalgic. We agree with Sarial-Abi and colleagues, and expand upon their theory by suggesting that different vintage products can trigger nostalgia in different people. If Pete is not at all nostalgic for the 1980s, then he will not feel any nostalgia

when he finds a vintage Members Only jacket at the thrift shop. Likewise, if Pam is nostalgic for the 1920s, she is probably willing to pay hundreds of dollars for a vintage 1920s-era clock.

Fifth, although we show that consumers who are nostalgic for one time (e.g., 1990s) may not be nostalgic for another time (e.g., the Old West), we did not explore whether consumers tend to be nostalgic for time periods that are associated with similar values (e.g., both the 1960s and the 1990s). Because certain time periods are associated with similar values, and because consumers feel more nostalgic for time periods that they associate with their own values (see study 5), it is possible that people are prone to feel nostalgic for specific constellations of time periods. For example, because Don is nostalgic for the 1980s, a time he associates with conservatism and a strong work ethic, he also feels nostalgic for the 1950s—a decade associated with similar values. Furthermore, some personality traits could correlate more with nostalgia for certain time periods over others. People who are more nostalgic for the 1950s (like Don) may be higher in conscientiousness and lower in openness to new experiences, both characteristics found more often in conservatives (Jost 2017). Findings such as these would provide insights not just to marketers—who could use this information to better design and target nostalgic ads and products—but also to researchers—who could use these personality constellations to better understand why people become nostalgic for certain time periods over others.

Finally, we believe that conceptualizing nostalgia as an emotion that people feel toward specific time periods could allow researchers to explore whether nostalgia for cultural versus personal time periods leads to different outcomes. For example, nostalgia for the collective memories of a time period (e.g., fashion, movies, products, and music)—which does not necessarily involve memories of friends or family—could elicit a feeling of cultural connectedness rather than, or in addition to, social connectedness. Two strangers who are

nostalgic for the music and fashion of the 1990s can reminisce together in a way that two strangers who are nostalgic for college road trips or holidays with their family cannot. Such findings would supplement the current research on nostalgia by delineating when and why nostalgia leads to certain responses (e.g., voting for one politician over others) in some people but not others.

Conclusion

Nostalgia allows consumers to mentally time travel to bygone eras, from the dusty trails of the Old West to the tie-died counterculture of the 1960s. Marketers regularly act as tour guides on these mental time travel experiences by evoking past eras in their products and advertisements. It is therefore important that marketing practitioners and researchers alike have a valid way of conceptualizing and measuring nostalgia. In this project, we aimed to fulfill this goal by developing a scale to measure integral nostalgia, or nostalgia for a specific time period. We also showed how researchers and practitioners alike can use the Nostalgia Scale to predict important outcomes, and we suggested ways in which our research can lead to further insights about nostalgia. We hope that researchers will use the Nostalgia Scale to further advance our understanding of nostalgia, mental time travel, and consumer behavior more generally.

ESSAY 2: THE STORY OF MY LIFE: HOW NOSTALGIA PERSUADES THROUGH REFLECTIVE IMMERSION

Introduction

Nostalgia is a key tool in the advertiser's toolbox. One only needs to look to advertising's biggest stage to see that advertisers believe in nostalgia's effectiveness: Nostalgia was a clear theme during the Super Bowl in 2019 (Maheshwari 2019), 2020 (Meehan 2020), and 2021 (Smith 2021). In 2020, for example, Amazon took consumers on a time traveling journey from the dusty trails of the Old West to the golden era of R&B in the 2000s. And nostalgia is not just found in advertisements: Companies as diverse as General Mills, Volkswagen, and Nintendo have rebooted nostalgic versions of their cereal mascots, vehicles, and gaming systems to appeal to consumers. Advertisers are not alone in thinking that nostalgia persuades consumers: Popular press and marketing industry experts alike are also convinced of nostalgia's persuasive powers (Gross 2018; Miranda 2017; Olenski 2016). Forbes, for example, called nostalgia both an "invaluable tactic, especially for engaging millennials" (Friedman 2016, para. 2) and one of the five hot marketing trends of 2019 (Salzman 2019).

Despite its popularity, questions remain about exactly how nostalgia persuades. Industry experts often claim that nostalgic products, advertisements, and appeals persuade through positive emotions (Gross, 2018; Modicum, 2017). Researchers have similarly argued—and found evidence—that nostalgia marketing persuades by associating a product, brand, or advertisement with positive feelings (Chou and Lien 2010; Muehling and Pascal 2011; Muehling and Sprott 2004; Pascal et al. 2002). However, in this paper we argue that this understanding of nostalgic persuasion is only partly correct. Specifically, we propose and show that in addition to persuading through positive emotions, nostalgia marketing also persuades through a phenomenon we refer to as *reflective immersion*. Reflective immersion occurs when reflection

(e.g., on memories) reaches a level of realism and vividness that triggers the phenomenological experience known as narrative transportation: a feeling of cognitive and emotional engagement that makes people more receptive to persuasive messages. In the present work, we argue and find that nostalgic stimuli lead consumers to reflect on—and become transported by—vivid memories of the past. This experience of reflective immersion, in turn, makes nostalgia appeals (e.g., ads or products) more persuasive, above and beyond the positive feelings that they trigger.

Our findings are important to practitioners because they change our understanding of how and when to best use nostalgic appeals. First, our findings suggest that nostalgia marketing provides a more profound and durable route to persuasion than previously thought. If nostalgia marketing only persuades directly through positive affect (i.e., an affect transfer model), then we would expect nostalgia to only lead to more temporary changes in attitude and behavior (Gravert 2020). However, if nostalgia also persuades through reflective immersion, then we would expect nostalgia to lead to more enduring changes than other models would suggest, as narrative transportation makes people more likely to internalize persuasive messages and view them as their own (Escalas 2007; Shen et al. 2018). Second, our findings also matter to practitioners because they have implications for when nostalgia marketing will be most effective. In contrast to emotional appeals, persuasive appeals that rely on reflective immersion require a relatively high level of cognitive processing, and are consequently less persuasive if those cognitive resources are already engaged. Thus, to the extent that nostalgia marketing persuades through reflective immersion, we can make specific recommendations for when nostalgia appeals are most effective. We discuss these recommendations in the general discussion.

Our findings also contribute to theory in three important ways. First, researchers have traditionally focused on how the emotional components of nostalgia (i.e., warm feelings tinged

with loss) influence marketing outcomes, whereas our research focuses specifically on how the act of reflection on a nostalgic past influences persuasion. By demonstrating that nostalgia persuades through reflective immersion in addition to the pure affect transfer demonstrated previously, we provide a better explanation for why nostalgia has such a powerful effect on consumers. Second, we demonstrate that cognitive processes play a much more important role in the relationship between nostalgic stimuli and the consequences of nostalgia than a simpler stimulus response account might suggest (e.g., (Baker and Kennedy 1994; Holak and Havlena 1998). When a stimulus triggers an emotional response, it often does so directly. For example, consumers might feel happy and content when they watch a holiday ad that contains cute children opening presents. However, we show that nostalgic stimuli do not just directly trigger positive emotions; they also trigger vivid and realistic reflection on the past, an intermediate step that research has largely overlooked (c.f., (Huang et al. 2016; Leboe and Ansons 2006), but that we show uniquely impacts persuasion. Finally, we demonstrate another way in which people can be spontaneously transported by their own self-generated mental simulations (Nielsen, Escalas and Hoeffler 2018). Nielsen and colleagues (2018) found that ads for Really New Products can lead consumers to mentally simulate scenarios in which they might use the new product. When these mental simulations were sufficiently vivid, consumers experienced more narrative transportation and evaluated the Really New Products more positively. Our work shows that nostalgic advertisements can similarly lead consumers to experience reflective immersion not just into the future, but also into the past.

We organize this paper as follows. We discuss and draw upon past research to predict how nostalgia persuades through reflective immersion. We then test this prediction in seven studies. We first analyze 19,915 YouTube comments on ads from the last three Super Bowls and

show that nostalgic ads prompt higher levels of cognitive processing than humorous ads (pilot study). Next, we show that three different manipulations of nostalgia all lead to an increase in narrative transportation (Studies 1a, 1b, 1c), consistent with the central role of reflective immersion. We then show that nostalgia makes advertisements more persuasive as a result of reflective immersion (Study 2), and that reflective immersion persuades above and beyond the effect of positive affect transfer (Study 3). Finally, we show that interfering with the ability to engage in reflective immersion makes nostalgic ads significantly less persuasive (Study 4).

Theoretical Background

Persuading with Nostalgia

Advertisements can trigger emotions in the consumers who view them. Imagine that Sophia has just seen a beer commercial that features a sunny tropical beach, upbeat island music, and beautiful suntanned people playing volleyball in the sand. Sophia now feels just a little happier than she did before, even though she is not on the beach herself. These kinds of advertisements use stimuli (e.g., the beach, upbeat music) to trigger certain emotions (e.g., happiness, joy) that consumers associate with those stimuli. Those emotions then transfer to the advertised product or brand, resulting in increased liking and preference (Hasford, Hardesty and Kidwell 2015; Howard and Gengler 2001; MacKenzie, Lutz and Belch 1986; Pham, Geuens and De Pelsmacker 2013).

Marketers and industry experts agree that nostalgia marketing persuades in much the same way that other positive emotions do: by triggering warm feelings that transfer to the advertised product or service (Cargill 2018; Friedman 2016; Gross 2018; Modicum 2017). One Forbes article, for example, suggested that nostalgia is persuasive because it can “evoke feelings

of security, comfort and trust” (Gross 2018, para. 4). Another article proclaimed that nostalgia is a powerful marketing tool because it “can literally take negative feelings and turn them positive” (Modicum 2017, para. 7). Thus, just as Sophia liked the beer commercial because it made her feel relaxed, industry experts suggest that people like nostalgia marketing because it makes them feel good.

There is also strong evidence in the academic literature supporting this affect transfer model of nostalgic persuasion. First, evidence has shown that people experience nostalgia when they are exposed to objects (people, places, music, products, etc.) that evoke a warmer, simpler past that is gone, never to return (Davis 1979; Holbrook 1993). Building on this, other research has found that people who reflect on their nostalgic past feel positive emotions like contentment, happiness, and love (Hepper et al. 2012; Holak and Havlena 1998; Wildschut et al. 2006). Those warm, positive feelings then directly translate into positive attitudes toward the advertisement or product (Muehling and Pascal 2012; Muehling and Sprott 2004; Pascal et al. 2002). This “affect transfer” from an advertisement to a brand is possible because when consumers experience positive emotions while watching an advertisement (e.g., an ad that evokes nostalgic high school summers), they use these emotions to help determine how they feel about the products in front of them (Burke & Edell, 1989; Derbaix, 1995; Pham, 1998). For example, Muehling and Pascal (2011) found that a camera advertisement with references to high school romances and summer vacations (i.e., childhood nostalgia) made people feel more positive emotions such as joy and affection than a control version of the advertisement, and those positive emotions, in turn, made people like the advertisement and the brand more.

Although it is well documented that nostalgia persuades in part through positive affect, there is good reason to believe that there is more to nostalgia marketing than just direct affect

transfer. Specifically, we propose that any complete model of nostalgia must also include the impact of reflective immersion.

Reflective Immersion

When reflection is sufficiently vivid, we propose that it can lead to the same experience of narrative transportation that occurs when people get deeply immersed into a good book or a movie. We refer to this transporting form of reflection as *reflective immersion* and propose that it contributes to how nostalgia is experienced and persuades.

The first component of reflective immersion is vivid and realistic reflection. Prior work has speculated that nostalgia necessarily involves some form of reflection on the past. For example, some researchers have conceptualized nostalgia as an emotion that arises as a result of reflection on the past (Batcho 2007; Holak and Havlena 1998; Huang et al. 2016), while others have theorized that the act of reflecting on the past plays a key role in how people experience nostalgia (Hepper et al. 2012; Merchant et al. 2013; Muehling and Sprott 2004). Consistent with the latter conceptualization, nostalgic stimuli appear to evoke more mental imagery—and thus require more cognitive effort—than ordinary stimuli (Baker and Kennedy 1994; De Brigard 2019; Muehling and Pascal 2011). For example, people remember fewer features of nostalgic advertisements compared to non-nostalgic versions (Muehling and Pascal 2011), which suggests that nostalgia may occupy people's thoughts more than other emotions. Furthermore, recent research suggests that nostalgic memories activate the same parts of the brain that evoke imagination and counterfactual thinking (De Brigard 2019; Waytz et al. 2015).

Building on this suggestive evidence, we propose that any stimulus that evokes nostalgia will also spontaneously (i.e., without prompting) evoke reflection on the past, such that nostalgia and reflection are inextricably linked. In other words, we propose that reflection occurs

spontaneously whenever someone is exposed to stimuli that activate memories for a nostalgic time period (e.g., an advertisement with movies or music from a nostalgic decade).

Reflection is only one component of the reflective immersion process. The other component of reflective immersion is narrative transportation—an immersive experience of mental and emotional engagement with a narrative that positively affects persuasion (Green & Brock, 2000; Escalas, 2004, 2007; Nielsen, Escalas, & Hoeffler, 2018). When we consume stories, we often feel disconnected from our present surroundings and transported into the story. People can experience narrative transportation when they consume (i.e., read, watch) narratives in a variety of different formats, including books (Green 2004; Green and Brock 2000), shows and movies (Green and Clark 2013; Moyer-Gusé and Nabi 2010), or advertisements (Escalas, 2007; Nielsen & Escalas, 2010). Yet people can also experience narrative transportation when they simulate and immerse themselves into specific scenarios or memories (Escalas 2007; Evans et al. 2021). For example, Escalas (2007) found that participants experience more narrative transportation when they are asked to mentally simulate the use of a product in an advertisement. Similarly, Evans et al. (2021) found that people experience more transportation when they are asked to *immerse* themselves into a memory compared to when they are instructed to describe a recent event using *detached, non-emotional* language.

Several pieces of evidence lead us to predict that reflection on nostalgic memories can lead to narrative transportation. First, nostalgic memories often feature central characters and a distinct beginning, middle, and end, which makes them more narrative in structure than other memories (Wildschut et al. 2006). Second, nostalgic memories resemble other cognitively involved mental simulations that are accompanied by narrative transportation (De Brigard 2019; Escalas 2004; Nielsen et al. 2018). Finally, nostalgic memories possess all three traits that Van Laer and colleagues (2014)

identified as making narratives more transporting: identifiable characters, the perception that the story is true, and an easy-to-imagine plot. Nostalgic memories often contain identifiable characters, including the self and close friends or family (Hepper et al. 2012; Wildschut et al. 2006). People also view nostalgic memories as real and authentic (Brown et al. 2003; Kessous 2015; Leboe and Ansons 2006). Finally, nostalgic memories are vivid and easy to imagine (De Brigard 2019; Merchant et al. 2013). Thus, we propose that when consumers reflect on their nostalgic past, they are likely to feel transported by that reflection. In other words, we propose that nostalgic memories lead to reflective immersion.

In this paper, we propose that nostalgia marketing persuades through reflective immersion—vivid and realistic reflection that leads to narrative transportation. We base this proposal on two core findings. First, Nielsen et al. (2018) found that ads for Really New Products can cause knowledgeable consumers to spontaneously experience what we refer to as reflective immersion. Specifically, they demonstrated that consumers who view ads for Really New Products engage in mental simulations of scenarios in which they might use those products. For knowledgeable consumers, those simulations reach a level of vividness and realism that leads the consumers to experience narrative transportation—and thus more persuasion—as a result. We propose that nostalgia marketing can similarly cause consumers to spontaneously reflect on vivid and realistic memories of the past and experience narrative transportation as a result. In other words, nostalgia marketing can elicit reflective immersion even when the ad itself does not contain a vivid and realistic narrative. Second, there is strong evidence that experiencing narrative transportation can make people more receptive to persuasive messages (Dal Cin, Zanna and Fong 2004; Escalas 2004, 2007; Green and Brock 2000; Hamby, Brinberg and Daniloski 2017). There are at least three reasons why consumers are more persuaded when

they experience narrative transportation. First, some findings suggest that narrative transportation makes persuasive appeals more effective because people enjoy the feeling of being transported (Escalas 2004). Second, other findings suggest that narrative transportation interferes with the ability to counterargue against persuasive messages, which makes those messages more effective (Green and Brock 2000; Moyer-Gusé and Nabi 2010; Niederdeppe et al. 2012). Finally, other work has found that feeling transported makes people more likely to incorporate a persuasive message into their own beliefs about the world (Hamby et al. 2017). Regardless of the specific mechanism involved, researchers have consistently found that narrative transportation leads to stronger and more enduring belief change (Appel and Richter 2007; Green et al. 2008; Green, Garst and Brock 2004).

The Present Research

Combined, the literature presented above leads us to conclude that nostalgic memories involve vivid reflection on the past and possess many of the qualities that lead consumers to experience narrative transportation. Consequently, we first propose that when consumers are prompted to think about a nostalgic past, they will experience reflective immersion—a phenomenon during which reflection becomes so vivid and realistic that it evokes narrative transportation. Formally,

H1: Consumers who are exposed to nostalgic (vs. non-nostalgic) stimuli will experience higher levels of reflective immersion.

Furthermore, prior research has demonstrated that consumers who are more transported by a persuasive message are also more receptive to that message (Escalas 2004, 2007; Green and Brock 2000). Thus, we propose:

H2: Reflective immersion will mediate the relationship between nostalgia and persuasion, such that ads using nostalgic (vs. non-nostalgic) stimuli will evoke more reflective immersion, which will lead to more positive brand attitudes.

Reflecting on the past is a cognitively demanding process. Consequently, if nostalgia persuades through reflective immersion, as predicted, then placing people under high cognitive load should attenuate these persuasive effects. In contrast, emotional appeals do not require extensive cognitive resources (Petty and Cacioppo 1986; Shiv and Fedorikhin 1999). Consequently, if nostalgia only persuades through positive affect transfer, then placing people under high cognitive load should not affect nostalgia's persuasiveness. We propose the following hypothesis to contrast these two accounts:

H3: Reducing consumers' available cognitive resources while they view an advertisement will attenuate the effect of nostalgic (vs. non-nostalgic) stimuli on brand attitudes.

In the first four studies we test hypothesis 1 by establishing a causal connection between nostalgic (vs. non-nostalgic) stimuli and reflective immersion. In the final three studies we test hypotheses 2 and 3 by demonstrating that nostalgic (vs. non-nostalgic) stimuli make advertisements more persuasive by evoking more reflective immersion.

Study 1: Testing the Effect of Nostalgia on Narrative Transportation

The central hypothesis in our work is that consumers who are exposed to nostalgic stimuli will experience higher levels of reflective immersion than those who are not exposed to nostalgic stimuli (H1). We first tested this basic prediction in four studies. Specifically, we tested whether nostalgic (vs. non-nostalgic) stimuli and memories lead to more cognitive processing and narrative transportation—two indicators of reflective immersion. We conducted a pilot study

using a dataset of YouTube comments on Super Bowl ads from the last three years, and tested whether nostalgic ads evoked more cognitive processing than humorous ads. We then conducted three studies to test whether consumers experience more transportation when they reflect on nostalgic memories. We discuss the implications for all four studies after the results of Study 1c, then investigate the role that reflective immersion plays in persuasion.

Pilot Study – Nostalgic Ads Evoke More Cognitive Processing Than Positive Ads

Prior to investigating our specific hypotheses in the lab, we sought to first confirm that consumers outside of the lab behave consistently with our predictions when encountering nostalgic advertisements. Thus, in this pilot study we investigated how consumers react to nostalgic Super Bowl ads by scraping and analyzing comments made in response to those ads on YouTube. Specifically, we used the Linguistic Inquiry and Word Count (LIWC; Pennebaker et al., 2015) program to test whether nostalgic ads lead to higher levels of cognitive processing than humorous ads. We chose to contrast nostalgic ads with humorous ads for two reasons. First, humor appeals allow us to contrast our reflective immersion account with the current affect transfer account, which argues that nostalgia appeals persuade through positive affect, just as humor appeals do. Second, many Super Bowl ads rely on humor appeals, which gives us a large sample size for comparison.

Data. We began with a list of all 196 Super Bowl ads from 2019, 2020, and 2021 listed on superbowl-ads.com. We excluded trailers for movies and television shows since they are typically formatted as narratives regardless of whether they use other types of appeals ($n = 25$). We also excluded ads that did not appear on YouTube ($n = 3$) and ads that appeared on YouTube

but did not have any comments ($n = 41$). This left us with a total of 127 Super Bowl ads and a sample size of 19,915 YouTube comments made in response to those ads.²

Three independent judges coded the 127 Super Bowl advertisements for the extent to which each ad used a nostalgia and/or humor appeal. Because nostalgia and humor are both idiosyncratic (i.e., one person's old is another person's nostalgic) we specifically sought judges who spanned the 18-35 year range, which represents the majority of YouTube users (Newberry 2021). Specifically, one judge was an undergraduate student, one a professional in their late 20s, and one a professional in their 30s. The judges coded each advertisement on the degree to which the ad used a humor and a nostalgia appeal (1 = not at all, 5 = very much). We classified an advertisement as nostalgic (humorous) when two or more judges scored the ad at 3 or above on nostalgia (humor). The average pairwise Cohen's Kappa among the three judges was .37 for the nostalgia codes and .45 for the humor codes, indicating fair to moderate levels of agreement among our three judges (Landis and Koch 1977). We also replicated the findings below when we restricted our analysis to advertisements that all three judges coded as 3 or more on nostalgia (humor) and, separately, that two or more judges coded as 4 or more on nostalgia (humor).

To measure the extent to which the ads evoked cognitive processing and positive emotion, we analyzed the comments using the LIWC program (Pennebaker et al., 2015; $M_{\text{WordsPerComment}} = 12.34$; $SD = 23.81$). LIWC counts the percentage of words in a text that reflect certain emotions or types of speech. For this analysis we specifically focused on the 797 words that LIWC categorizes as signaling cognitive processes (e.g., cause, know, ought, think, etc.) and 620 words that LIWC categorizes as signaling positive emotions (e.g., love, nice, sweet, etc.).

² We used scraping software (Chrome Youtube Comment Scraper) that limits its downloads to the most recent 1,200 comments per video.

We used these categories to create the dependent variables in our analyses: cognitive processing (*cogproc*: $M = 8.14$, $SD = 10.62$) and positive emotions (*posemo*: $M = 9.77$, $SD = 16.96$).

Analysis and Discussion. To test whether nostalgic Super Bowl ads evoked more cognitive processing than humorous Super Bowl ads, we compared the comments on videos that were nostalgic but not humorous (coded as 1; $n_{\text{videos}} = 18$) with comments on videos that were humorous but not nostalgic (coded as -1; $n_{\text{videos}} = 51$). We then ran linear regression analyses testing the effect of nostalgic (vs. humorous ads) on cognitive processing (*cogproc*) and positive emotions (*posemo*). The results of these analyses revealed that nostalgic ads generated significantly more cognitive processing in their respective YouTube comments than humorous ads ($M_{\text{NostAds}} = 9.92$, $SD = 12.05$, $M_{\text{HumorAds}} = 7.64$, $SD = 10.12$; $\beta = .089$, $t = 8.32$, $p < .001$) but significantly less positive emotion ($M_{\text{NostAds}} = 7.21$, $SD = 14.70$, $M_{\text{HumorAds}} = 10.50$, $SD = 17.48$; $\beta = -.080$, $t = -7.51$, $p < .001$).³

Prior research has suggested that consumers experience nostalgic and positive (e.g., humorous) ads in similar ways. These results demonstrate that when consumers view nostalgic advertisements in a real-world environment, they engage in higher levels of cognitive processing than do those who view humorous advertisements. This suggests that consumers engage in higher levels of reflection when they view nostalgic ads, which is consistent with our hypothesis that nostalgic stimuli lead to reflective immersion. In addition, results revealed that consumers who view nostalgic ads also appear to experience less positive affect than those who view humorous ads. Although this finding was not predicted, it is consistent with nostalgia being a

³ To test the robustness of these findings, we conducted the same analyses, but with a linear mixed model using maximum likelihood estimation and with the contrast code treated as a fixed effect. This allowed us to account for the nesting of comment-level data within videos. Because several of the videos in our dataset only contained one ($n = 6$) or two ($n = 8$) comments, we excluded these videos from our follow-up analysis. Using this analysis, we replicated our core finding that nostalgic ads generated significantly more cognitive processing in their respective YouTube comments than humorous ads (Estimate: .72; $t(55.84) = 2.42$, $p = .019$).

mixed emotion consisting of both positive and negative emotions. Overall, this pilot study provides initial support for the core premise of this paper: that viewing nostalgic advertisements is qualitatively different from viewing positive advertisements. We next move to more controlled environments to test whether the type of reflection evoked by nostalgic stimuli leads to more narrative transportation.

Study 1a – Manipulating Nostalgia Through Reflection on a Nostalgic Memory

In Study 1a we test whether nostalgic memories evoke higher levels of narrative transportation using the event reflection task (Wildschut et al. 2006). This task, which is used frequently in nostalgia research, involves asking participants to recall a nostalgic (vs. a recent) event. The original instructions encourage participants to either “immerse [themselves] in the nostalgic experience” or to “write a purely factual and detailed account” about a recent memory. In other words, the original instructions contained differences that—aside from manipulating whether the target memory is nostalgic or not—could potentially manipulate how immersed people felt by the memory. Thus, we added a third condition that allowed us to test these two effects (instructions to immerse vs. reflecting on a nostalgic memory) separately.

Stimuli and Measures. The original event reflection task has two conditions (Wildschut et al. 2006, 987), Study 6): the experimental condition, in which participants are asked to immerse themselves into a nostalgic experience, and the control condition, in which they write about a recent event using more analytical language. In Study 1a, we evoked reflection on a nostalgic memory using the following instructions:

Please think of a nostalgic event in your life—a nostalgic event that has personal meaning for you. Specifically, try to think of a past event that makes you feel most nostalgic.

Bring this experience to mind. Immerse yourself in the nostalgic experience. Then, write

about this event in the space below. Describe the event and how it makes you feel nostalgic.

In the control condition from the same previous research (Wildschut et al. 2006), participants saw the following instructions:

Please think of an ordinary event in your life that took place in the last week. Try to bring this event to mind and think it through as though you were an observer of the event, rather than directly involved. Imagine the event as though you were an historian recording factual details (e.g., I got on the number 37 bus). Then, please write about this everyday event in the space below. Write a purely factual and detailed account (e.g., like in a court of law, avoiding emotionally expressive words).

Although these original instructions are effective for evoking nostalgia, they do not allow us to establish the extent to which nostalgia leads to more reflective immersion. The “nostalgic memory-immersion” condition directly asks participants to immerse themselves in a memory. In contrast, the control condition—which we refer to as the “recent memory-analytical” condition—asks participants to provide a factual account of a recent event while avoiding “emotionally expressive words.” Prior research has found that the type of analytical processing style encouraged by the original control condition interferes with narrative transportation (Escalas 2007). This means that for the purpose of investigating reflective immersion, the original two sets of instructions do not allow us to separate the effect of nostalgia from the effects of asking participants to immerse themselves. To isolate the separate role of nostalgia and task instructions in this investigation, we created a second control condition (“recent memory-immersion”) that mimics the “nostalgic memory-immersion” condition, but in which we ask people to immerse themselves in a recent memory instead of a nostalgic memory. Thus, any difference in

transportation between the two conditions should occur because nostalgic memories are more vivid and realistic, and thus more transporting.⁴ This second control asked participants the following:

Please think of an event from last week—an event that is memorable. Specifically, try to think of an event you remember well. Bring this experience to mind. Immerse yourself in the experience. Then, write about this event in the space below. Describe the event and how it makes you feel.

Following the writing task, we measured narrative transportation using the general items from the narrative transportation scale ($\alpha = .75$, please see Appendix F for the full scale; Green & Brock, 2000). Because participants were writing about their own memories, we omitted the item “I wanted to learn how the narrative ended” from the narrative transportation scale, leaving us with 10 total items.

Additionally, we used a three-item measure of state nostalgia that commonly follows the event reflection task in other nostalgia research ($\alpha = .99$; “Right now, I am feeling quite nostalgic,” “Right now, I am having nostalgic feelings,” and “I feel nostalgic at the moment;” 1 = Strongly Disagree, 7 = Strongly Agree; Wildschut et al., 2006).

Participants and Procedure. In Study 1a, 224 MTurk workers ($M_{\text{Age}} = 38.69$; 47.8% female) participated in exchange for a \$.60 payment, designed to reach a target pay rate of \$9.00 an hour. For the remainder of the studies that we conducted with an online sample, we designed our payments such that they always reached an hourly rate of between \$7.50 and \$9.00 an hour; we hereafter refer to this as “a small payment.” We randomly assigned participants to one of

⁴ We did not introduce a “nostalgic memory-analytical” condition (e.g., “Imagine the nostalgic event as though you were a historian recording factual details...”) since prior literature has consistently demonstrated that analytical processing interferes with transportation. We were only interested in testing whether nostalgic memories can lead to transportation above and beyond instructions to immerse.

three memory reflection conditions and asked them to describe the assigned memory.

Participants then completed the narrative transportation scale before completing the nostalgia manipulation check. Finally, they answered demographic items, viewed a debrief, and received a completion code for payment.

Results. An ANOVA confirmed that the manipulation was effective: Nostalgia was significantly different across the three conditions ($F(2,221) = 86.84, p < .001$). Planned contrasts of our manipulation check measure indicated that participants in the “nostalgic memory-immersion” condition reported significantly more nostalgia ($M_{\text{Nostalgic_Immersion}} = 6.23, SD = .82$) than participants in both the “recent memory-immersion” ($M_{\text{Recent_Immersion}} = 4.15, SD = 1.87; t(221) = 8.63, p < .001$) and the “recent memory-analytical” ($M_{\text{Recent_Analytical}} = 2.92, SD = 1.82; t(221) = 12.78, p < .001$). Unexpectedly, we found that people in the “recent memory-immersion” condition reported significantly more nostalgia than those in the “recent memory-analytical” condition ($t(221) = 4.68, p < .001$), even though recent memories should not be nostalgic. We discuss this more at the end of Study 1 and in the general discussion.

In our test of hypothesis 1, an ANOVA revealed a main effect of the writing task on narrative transportation ($F(2,221) = 17.05, p < .001, \eta_p^2 = .134$). Independent planned contrasts confirmed that those who immersed themselves into a nostalgic memory ($M_{\text{Nostalgic_Immersion}} = 6.95, SD = 1.01$) experienced significantly more narrative transportation than either those who immersed themselves into a recent memory ($M_{\text{Recent_Immersion}} = 6.40, SD = 1.34; t(221) = 3.11, p = .002, \eta_p^2 = .042$) or those who thought analytically about a recent memory ($M_{\text{Recent_Analytical}} = 5.84, SD = 1.00; t(221) = 5.82, p < .001, \eta_p^2 = .133$). The “recent memory-immersion” condition also led to more narrative transportation than the “recent memory-analytical” condition ($t(221) = 2.88, p = .004$).

Study 1a provides the first experimental evidence for hypothesis 1 by showing that consumers who are exposed to nostalgic stimuli experience higher levels of reflective immersion than those who are not exposed to nostalgic stimuli. Importantly, instructions to participants to immerse themselves into a nostalgic memory led to more narrative transportation than instructions to immerse into a recent memory. This finding is consistent with our prediction that nostalgic memories lead to narrative transportation in part because they are more realistic and vivid than other memories. Furthermore, our “recent memory-immersion” condition led to more narrative transportation than the original “recent memory-analytical” control condition employed by Wildschut et al. (2006). This confirmed our initial suspicion that the original instructions contained differences that—aside from manipulating whether the target memory is nostalgic or not—also directly manipulated how immersed people felt by the memory. This difference in narrative transportation between the “recent memory-immersion” and “recent memory-analytical” conditions suggests that people are more transported when asked to immerse themselves, less transported when asked to think analytically, or both. In Study 1b we further test hypothesis 1 by holding the instructions constant but varying the target of the reflection on two dimensions: valence (i.e., positive vs. negative memories) and whether the memory represents a sense of loss.

Study 1b: Manipulating Nostalgia Through Reflection on a Nostalgic Place

Prior research suggests that people feel more nostalgic toward time periods and memories that they view positively and that contain elements that are lost, never to return (e.g., friends, places, buildings, products, etc.; (Hepper et al. 2012; Holak et al. 2007; Holbrook 1993). Consequently, we predict that people will feel more transported when they reflect on a place that is both positive in valence and is now considered lost—in other words, a place for which people

are likely to feel nostalgic. We test this prediction in Study 1b by asking participants to describe their favorite versus least favorite place in either their hometown or their current town.

Stimuli, Participants, and Procedure. In Study 1b 201 MTurk workers (55.2 % female, $M_{\text{Age}} = 37.28$) who no longer lived in their hometown participated in exchange for a small payment. We randomly assigned participants to write about one of four places in a 2 (participants' favorite vs. least favorite location) x 2 (in participants' hometown vs. their current town) between-subjects design. Specifically, participants received the following instructions: "Please describe your [favorite/least favorite] place in [your hometown/the city or town in which you currently live]. Please do your best to describe it in detail." In other words, participants either wrote about something positive (their favorite place) or negative (their least favorite place) that feels lost (hometown) or not lost (their current town).

Following the writing task, participants completed a version of the self-generated narrative transportation scale that we used in Study 1a ($\alpha = .81$; see Appendix F for the full scale). They then completed the nostalgia manipulation check from Study 1a ($\alpha = .98$) before answering several questions about themselves: demographic information, the name of their hometown, how often they go back to their hometown, how old they were when they left their hometown, and how long they have spent away from their hometown.

Results. Planned contrasts of the nostalgia measure revealed that the manipulation was successful: Participants who wrote about their favorite place in their hometown experienced more nostalgia ($M_{\text{Favorite_Hometown}} = 5.97$, $SD = 1.15$) than participants who wrote about their least favorite place in their hometown ($M_{\text{LeastFavorite_Hometown}} = 4.09$, $SD = 1.93$; $t(197) = 5.71$, $p < .001$), as well as their least favorite place ($M_{\text{LeastFavorite_Current}} = 3.13$, $SD = 1.82$; $t(197) = 8.73$, $p < .001$)

and favorite place ($M_{\text{Favorite_Current}} = 4.54$, $SD = 1.60$; $t(197) = 4.40$, $p < .001$) in the town where they currently live.

An ANOVA revealed no main effect of the location (participants' hometown vs. their current town) factor on narrative transportation ($F(1,197) = .04$, $p = .83$), but participants who wrote about their favorite place experienced more narrative transportation than participants who wrote about their least favorite place overall ($M_{\text{Favorite}} = 6.71$, $SD = 1.27$; $M_{\text{LeastFavorite}} = 6.14$, $SD = 1.25$; $F(1,197) = 10.29$, $p = .002$, $\eta_p^2 = .050$). Importantly, we also observed a significant interaction between location and valence ($F(1, 197) = 4.46$, $p = .036$, $\eta_p^2 = .022$). Exploring this interaction further, we found that, as predicted, participants were significantly more transported when they wrote about their favorite place in their hometown ($M_{\text{Favorite_Hometown}} = 6.91$, $SD = 1.14$) compared to their least favorite place in their hometown ($M_{\text{LeastFavorite_Hometown}} = 5.97$, $SD = 1.26$; $t(197) = 2.44$, $p = .02$), as well as their least favorite place ($M_{\text{LeastFavorite_Current}} = 6.31$, $SD = 1.24$; $t(197) = 2.44$, $p = .016$) and favorite place (marginally; $M_{\text{Favorite_Current}} = 6.50$, $SD = 1.38$; $t(197) = 1.66$, $p = .098$) in the town where they currently live.

Study 1c: Manipulating Nostalgia Through Nostalgic Advertising

In Studies 1a-b, we demonstrated that explicitly asking people to reflect on a nostalgic past can lead to reflective immersion. In Study 1c, our goal is to determine whether nostalgic stimuli—advertisements, specifically—can *spontaneously* trigger reflective immersion (as evidenced by narrative transportation) without explicit instructions to reflect on the past. In other words, we aim to test whether popular culture icons (e.g., movies, music, celebrities) that trigger thoughts about a past decade (e.g., the 1990s) can lead people to immerse themselves into memories of the past. We predict that viewing advertisements with nostalgic (vs. non-nostalgic)

stimuli will lead consumers to experience more narrative transportation, just as writing about a nostalgic memory (Study 1a) or place (Study 1b) transported participants more.

Stimuli. For Study 1c we designed three pairs of advertisements. Each pair of advertisements featured a nostalgic (1990s) and modern (2018) ad that were similar in layout and text. Each pair advertised a different European product that is not widely sold in the United States. We used popular, positively-reviewed media stimuli (e.g., music, movies, television) in both the nostalgic and modern version of each ad pair to help ensure that the nostalgic and modern ads only differed in the degree to which they evoked nostalgia. The first pair of ads advertised Jolly Cola—a soda brand—using a 1990s-style (vs. modern) color scheme and songs from the top of the Billboard charts in the 1990s (e.g., *Quit Playing Games with My Heart* by Backstreet Boys) vs. 2018 (e.g., *thank u, next* by Ariana Grande). The second pair of ads advertised Toms—a chocolate brand—using a different 1990s-style (vs. modern) color scheme and movie posters from popular movies that appeared on blog posts about quintessential 1990s (e.g., *Titanic*) vs. 2018 (e.g., *A Star is Born*) movies. Finally, the third pair of ads advertised Gott & Blandat—a licorice gummy candy—using images of popular culture icons from the 1990s (e.g., the popular TV comedy *Friends*) vs. 2018 (e.g., the popular TV comedy *Big Bang Theory*). For the third set of ads, we picked stimuli that appeared frequently under Google searches related to “pop culture 1990s” and “pop culture 2018.” To ensure that any differences in narrative transportation are due to the stimuli featured in the ads, we did not include any language in the ads that encourages nostalgic reflection, mental simulation, immersion, or narrative processing. Please see Appendix G for all six advertisements.

Pretests of the Jolly Cola and Toms candy ads with all nostalgic and modern stimuli removed confirmed that participants did not find the nostalgic ad designs to be more exciting,

eye-catching, colorful, or high-quality (all t -values <1.73). We did not pretest the Gott & Blandat advertisements because they featured a white background. A separate set of pretests confirmed that each nostalgic ad elicited more nostalgia (as measured by the 3-item scale from Studies 1a and 1b) than its modern counterpart (all t -values >14.46).

Participants and Procedure. In Study 1c 301 Amazon Mechanical Turk (MTurk) workers participated in exchange for a small payment (46% female, $M_{\text{age}} = 40.31$).⁵ To improve the likelihood that our advertisements would trigger vivid memories for the 1990s, we only recruited participants who were at least 30 years old.⁶ We randomly assigned participants to view three ads in a fully crossed 2 (ad type: nostalgic vs. modern) x 3 (ad pair: Jolly Cola, Toms Candy, Gott & Blandat) within-subjects design. Participants viewed either the nostalgic or modern version from each of three pairs of ads, and they viewed the three ads in randomized order. Following Nielsen et al. (2018), below each ad we asked participants to briefly describe what came to mind as they were viewing that ad, so as to ensure that everyone sufficiently processed it. After viewing each ad, participants completed a version of the self-generated narrative transportation scale from Study 1b (Jolly ads $\alpha = .90$, Toms ads $\alpha = .93$, Gott & Blandat ads $\alpha = .94$). After completing the narrative transportation scale for the third and final ad, participants answered demographic questions, viewed a debrief, and received their completion code for payment.

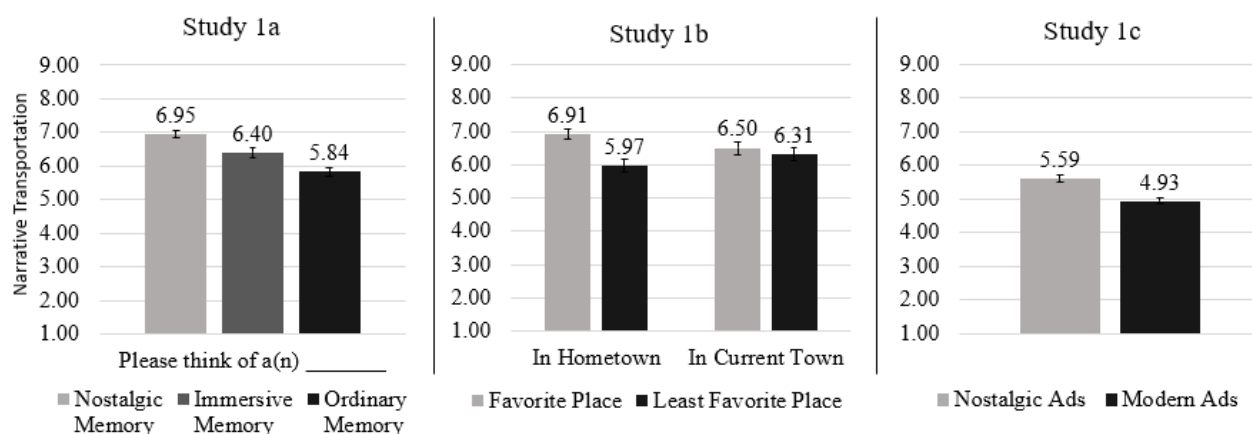
Results. A repeated measures ANOVA treating ad pair, order, and nostalgia as within-subjects factors confirmed that neither ad pair nor order of presentation interacted with the effect of the nostalgic ad manipulation on narrative transportation (both F s < 1). Thus, we collapsed

⁵ In the process of recreating all datasets for this submission we noticed that one person had submitted their survey well after the survey had closed. We confirmed that the results did not change when including this person's data (in fact they became slightly stronger) but did not include this person's data in the analyses reported here.

⁶ We later learned that participants in the 18-30 range equally felt nostalgic for these stimuli and thus dropped this requirement in Studies 2-4.

across brand and position for our main analysis. As predicted, and consistent with hypothesis 1, participants were more transported by ads that featured nostalgic stimuli ($M_{\text{Nostalgic}} = 5.59$, $M_{\text{Modern}} = 4.93$; $F(1,211) = 63.13$, $p < .001$, $\eta_p^2 = .230$). These results hold when looking at only the first exposure per participant as a between subjects analysis (controlling for brand; $M_{\text{Nostalgic}} = 5.83$, $M_{\text{Modern}} = 5.08$; $F(1,295) = 12.70$, $p < .001$, $\eta_p^2 = .041$). Please see Appendix H for full brand and position level analyses.

Figure 8: Results of Study 1



Note: Bars represent standard error of the mean.

Study 1 Discussion

We hypothesized that consumers who are exposed to nostalgic stimuli (vs. those who are not) will experience more reflective immersion (H1). Across four studies, we found consistent and compelling evidence to confirm this prediction (see figure). In the pre-study, we showed that YouTube comments on nostalgic (vs. humorous) Super Bowl ads exhibited higher levels of cognitive processing, which is consistent with our prediction that nostalgic ads evoke more reflection than positive emotion-based ads. In Studies 1a-c we found that nostalgic memories and stimuli evoked more narrative transportation. Where Study 1a demonstrated that asking people to immerse themselves into their nostalgic past will transport them, Study 1b achieved similar

effects without asking participants directly to immerse themselves, and Study 1c demonstrated that nostalgic advertisements can lead to reflective immersion without any instructions to reflect, immerse, or simulate.

Combined, these four studies provide strong evidence to support our prediction that consumers who are exposed to nostalgic stimuli spontaneously experience a phenomenon that we refer to as reflective immersion: reflection that is so vivid and realistic that it evokes narrative transportation. In the next two studies, we use a mediation design to directly explore the extent to which nostalgia persuades through reflective immersion (Study 2, 3), above and beyond the effect of positive emotions (Study 3). We then test whether interfering with the ability to reflect on a nostalgic past will weaken nostalgia's persuasiveness (H3; Study 4).

Study 2: Persuasion Through Reflective Immersion

Study 2 tests whether the finding that nostalgic advertisements elicit reflective immersion can help explain how they persuade. In other words, we investigate whether reflective immersion mediates the relationship between nostalgia marketing and persuasion (H2).

Stimuli

In Study 2 we enlisted a professional graphic designer to design two ads for the European soda brand Jolly Cola: one containing nostalgic (1990s) stimuli and one containing modern (2018) stimuli. As in Study 1c, we used popular 1990s song titles with a retro design to evoke nostalgia and popular 2018 song titles with a modern design to evoke non-nostalgic memories. A pretest of these new ads ($N = 60$; $M_{\text{Age}} = 40.92$; 39.3% female) using the nostalgia manipulation check from Studies 1a-c confirmed that the nostalgic ad evoked higher levels of nostalgia than the modern ad ($t(60) = 2.04$, $p = .046$). More importantly, a pretest revealed that participants (N

= 60; $M_{\text{Age}} = 40.70$; 43.3% female) liked both the nostalgic and modern songs equally ($t(60) = .59, p = .558$).

Participants and Procedure

One hundred and ninety-eight MTurk workers participated in Study 2 in exchange for a small fee ($M_{\text{Age}} = 38.17$; 45.5% female). Because our ads were for soda, we decided a priori to filter out participants who stated that they never drink soda ($n = 19$), leaving us with a sample of 179 for the analysis. We carried out a similar procedure for all three of the studies that used persuasion as a DV (Studies 2-4). Filtering these participants out did not have an effect on the results in any of the three studies; significant results remained significant, and non-significant results remained non-significant.

We randomly assigned participants to view either the nostalgic (1990s) or modern (2018) soda advertisement. Unlike in Study 1c, we did not ask participants to write out their thoughts while viewing the ad to make sure that doing so did not influence our results in Study 1c. After viewing the ads, participants completed a three-item semantic differential brand attitude scale for the advertised cola brand (9-point scale; “Unappealing-Appealing,” “Unpleasant-Pleasant,” “Unlikeable-Likeable”). The persuasion measure was followed by the spontaneous narrative transportation scale used in Study 1b (Nielsen et al. 2018). At the end of the study, all participants answered demographics questions and the question about soda consumption, viewed a debrief, and received their payment code.

Results and Discussion

As predicted, the nostalgic ad led to more narrative transportation ($M_{\text{Nostalgic}} = 5.33, SD = 1.79$; $M_{\text{Modern}} = 4.70, SD = 1.81$; $F(1, 177) = 5.35, p = .022, \eta_p^2 = .029$) and more persuasion

($M_{\text{Nostalgic}} = 6.49$, $SD = 1.88$; $M_{\text{Modern}} = 5.69$, $SD = 2.30$; $F(1, 177) = 6.49$, $p = .012$, $\eta_p^2 = .035$)

than the modern ad. Using the PROCESS macro in SPSS (Hayes, 2017; 5,000 bootstrap samples, Model 4), we confirmed that narrative transportation mediates the effect of nostalgia on persuasion (I.E. = .43, 95% CI [.06, .81]). When we controlled for narrative transportation, the direct effect of nostalgia on persuasion became non-significant (95% CI [-.14, .88]).

Study 2 provides the first support for our prediction that nostalgia marketing persuades through reflective immersion (H2) by showing that narrative transportation mediates the relationship between nostalgia and persuasion. By using a different ad design from those used in Study 1c, Study 2 also provides additional evidence that the effect of nostalgia marketing on reflective immersion is robust across multiple products, ad designs, and nostalgic stimuli.

Study 3 – Competitive Mediation: Positive Affect and Transportation

As discussed in the introduction, prior research suggests that nostalgia marketing persuades through positive affect (Holak and Havlena 1992; Muehling and Pascal 2011; Muehling and Sprott 2004; Pascal et al. 2002). Under this theory, nostalgia generates warm feelings that then transfer to the advertisement, brand, or product, which is a mechanism known as the affect transfer model (Derbaix 1995; MacKenzie et al. 1986). In Study 3 we compare reflective immersion and positive affect transfer in a competitive mediation. This allows us to test whether reflective immersion mediates the relationship between nostalgia marketing and persuasion, above and beyond the effect of positive affect.

Stimuli, Participants, and Procedure

In Study 3, 243 Prolific workers participated in exchange for a small fee ($M_{\text{Age}} = 42.81$; 51.9% female). We restricted the study to participants who were over the age of 30. Participants

were randomly assigned to view either the nostalgic (1990s) or non-nostalgic (2018) cola brand advertisement from Study 1c. After viewing the ads, participants completed the three-item brand attitude scale from Study 2. They then filled out scales measuring two mediators: narrative transportation and positive affect (presented in counterbalanced order; see Appendix F for all measures used). We measured narrative transportation using the self-generated narrative transportation scale used in Study 1c, and we measured positive affect using the reduced version of the feelings scale (Goodstein, Edell and Moore 1990) used by Escalas (2004). Specifically, we asked participants, “How well do the following words describe how you felt while looking at the ad?” and presented eight positive emotions: active, alive, cheerful, delighted, energetic, happy, pleased, and stimulated (100-point slider scale from 0 = Not Well At All to 100 = Extremely Well). After participants filled out the two mediator scales, they answered a few demographic questions, a question about soda consumption, and were debriefed.

Results and Discussion

Twenty-one participants stated that they never drink soda, leaving us with a sample of 222 for the analysis. The order in which participants filled out the two mediator scales did not have a main effect on either mediator (both F-statistics < 3). More importantly, the display order of the two mediators did not significantly interact with the effect of the nostalgia manipulation on persuasion ($F(1,218) = 2.55, p = .310$). An ANOVA revealed that the nostalgic ad led to more narrative transportation ($M_{\text{Nostalgic}} = 4.99, SD = 1.60; M_{\text{Modern}} = 4.23, SD = 1.67; F(1, 220) = 12.09, p = .001, \eta_p^2 = .052$), more positive affect ($M_{\text{Nostalgic}} = 61.59, SD = 20.62; M_{\text{Modern}} = 53.03, SD = 25.56; F(1, 220) = 7.54, p = .007, \eta_p^2 = .033$), and more favorable brand attitudes ($M_{\text{Nostalgic}} = 4.97, SD = 1.44; M_{\text{Modern}} = 4.38, SD = 1.71; F(1, 220) = 7.71, p = .006, \eta_p^2 = .034$) than the modern ad. Additionally, a linear regression indicated that narrative transportation ($\beta = .54,$

$t(220) = 9.39, p < .001, \eta_p^2 = .286$) and positive affect ($\beta = .68, t(220) = 13.87, p < .001, \eta_p^2 = .467$) were both independently associated with more favorable brand attitudes, as expected based on prior literature.

We next tested whether narrative transportation and positive affect mediated the effect of nostalgia on brand attitudes in a competitive mediation using the PROCESS macro in SPSS (Hayes 2017); 5,000 bootstrap samples, Model 4). When controlling for the effect of positive affect, narrative transportation significantly mediated the effect of nostalgia on brand attitudes (I.E. = .12, 95% CI [.01, .26]). The remaining direct effect of nostalgia on brand attitudes, when controlling for the effects of positive affect and narrative transportation, was not significant ($\beta = .14, 95\% \text{ CI } [-.18, .45]$), indicating that narrative transportation and positive affect together fully mediated the effect of nostalgia on brand attitudes.

These results again confirm that consumers who are exposed to nostalgic (vs. non-nostalgic) stimuli experience higher levels of reflective immersion (H1), which makes nostalgic ads more persuasive (H2). Importantly, Study 3 also shows that reflective immersion—operationalized as narrative transportation—mediates the relationship between nostalgia marketing and persuasion, above and beyond the mediating effect of positive affect.

Study 4 – Inhibiting Nostalgic Reflection

We designed Study 4 to further document the role of reflective immersion in nostalgia marketing. In this study we introduced a cognitive load manipulation designed to interfere with the ability to engage in nostalgic reflection. We predict that people under high cognitive load—who are less able to reflect on nostalgic memories—will be less persuaded by nostalgic advertisements (H3). We predict no such effect of load for non-nostalgic advertisements.

Stimuli

For this study we used two different professionally designed ads for the European candy brand Toms: one containing nostalgic (1990s) stimuli and one containing modern (2018) stimuli. As in Study 1c, we used popular 1990s movie posters with a retro design to evoke nostalgia and popular 2018 movies with a modern design to evoke non-nostalgic memories. A pretest ($N = 119$; $M_{\text{Age}} = 40.23$; 48.7% female) confirmed that the nostalgic ad evokes higher levels of nostalgia than the modern ad ($t(115) = 3.26, p = .001$). Another pretest ($N = 61$; $M_{\text{Age}} = 40.26$; 52.5% female) revealed that the movie stimuli in the nostalgic and modern ads are equally well-liked ($F(1,59) = 1.01, p = .320$) and familiar ($F(1,59) = .22, p = .642$).

Participants and Procedure

One hundred sixty-seven undergraduate students ($M_{\text{Age}} = 20.88$; 44.3% female) signed up for and participated in Study 4 in exchange for partial course credit. We randomly assigned participants to conditions in a 2 (nostalgic vs. modern ad) x 2 (high vs. low cognitive load) between-subjects design.

We manipulated cognitive load using a memory task adopted from prior work (Kessler and Meier 2014); see also (Shiv and Fedorikhin 1999). We showed participants a string of letters that was either short (3 letters: low load) or long (9 letters: high load) and told them they would have to enter the letters approximately five minutes later. Participants looked at the letters, took as long as they needed to memorize them, and then clicked a button at the bottom of the screen to continue to the next portion of the study. To ensure that participants had no way of copying down the letters, we cleared all desks in the lab and required participants to leave their phones

and bags in the front reception area of the lab before starting the study. Please see Appendix I for all stimuli used in Study 4.

After memorizing the sequence of letters, participants began an ostensibly unrelated study in which they saw either the nostalgic or modern ad described above. As in Study 1c, participants briefly listed their thoughts about the ad before moving to the next page where they completed the brand attitude scale from Studies 2 and 3 (see Appendix F). Finally, they typed the letter string from the cognitive load manipulation and completed questions about their snack food consumption habits. They were then debriefed, thanked, and dismissed.

Results and Discussion

Nine participants stated that they never eat candy, leaving us with a sample of 158 for the analysis. A two-way ANOVA with brand attitudes as the dependent variable demonstrated neither a main effect of the ad manipulation ($F(1,154) = .64$) nor a main effect of cognitive load ($F(1,154) = 1.88$). Consistent with our predictions, the analysis did reveal an interaction between nostalgia and cognitive load ($F(1,154) = 5.38, p = .022, \eta_p^2 = .038$). Replicating Studies 2 and 3 (and supporting H2), we found that under low cognitive load, those who viewed the nostalgic ad reported more positive brand attitudes than those who viewed the modern ad ($M_{\text{NostalgicAd_LowCogLoad}} = 5.38, SD = 1.68, M_{\text{ModernAd_LowCogLoad}} = 4.53, SD = 1.76; t(154) = -2.20, p = .029, \eta_p^2 = .030$). Importantly, and consistent with a nostalgic reflection account, introducing cognitive load lowered brand attitudes for nostalgic ads ($M_{\text{NostalgicAd_HighCogLoad}} = 4.37, SD = 1.73; t(154) = 2.58, p = .011, \eta_p^2 = .041$) but did not affect attitudes toward the candy brand in the modern ad ($M_{\text{ModernAd_HighCogLoad}} = 4.79, SD = 1.68; t(154) = -.68, p = .500, \eta_p^2 = .002$).

The results of Study 4 confirmed our hypothesis that the effect of nostalgia marketing on persuasion is attenuated under high cognitive load (H3). This finding further supports our

prediction that nostalgia persuades, in part, through reflective immersion (i.e., a cognitive phenomenon) rather than positive affect transfer (i.e., an emotional phenomenon). Had our nostalgic ad persuaded entirely through positive affect transfer, cognitive load should not have attenuated the effect of the nostalgic ads on persuasion. Thus, Study 4 supports the finding from Study 3 that nostalgia boosts persuasion through reflective immersion, above and beyond the persuasive effects of positive affect that people feel when seeing nostalgic stimuli.

General Discussion

Nostalgia has underpinned entire political movements, created loyal fanbases for consumer products, and inspired stories that resonate deeply with millions of people. In this paper we explore the question of why nostalgia—and nostalgia marketing in particular—has such a powerful impact on consumers. Prior work has argued that nostalgia marketing is persuasive because it evokes positive affect that then transfers to the target advertisement, product, or brand. In this research we proposed and found evidence that when people encounter nostalgic stimuli, they spontaneously engage in reflective immersion, a phenomenon during which reflection becomes so vivid and realistic that it evokes narrative transportation and uniquely influences persuasion. We first showed that nostalgic Super Bowl ads (pilot study) lead to more cognitive processing than humorous Super Bowl ads, suggesting that nostalgia leads to a deeper form of reflection than other positive emotions. Study 1a manipulated nostalgia through a well-established reflection task and showed that nostalgic (vs. non-nostalgic) memories lead to more narrative transportation. This effect was replicated when we asked participants to describe a place that represented both positive memories and a sense of loss (i.e., two key components of nostalgic memories; Study 1b). Importantly, Study 1c showed that nostalgic stimuli (e.g., popular music and movies from the 1990s) can lead people to feel transported even without

specifically asking them to recall nostalgic memories. Together, these four studies support another key premise of this paper: that nostalgic stimuli lead people to reflect on—and become transported by—vivid and realistic memories of the past. In Studies 2-4, we showed that nostalgia marketing appeals are persuasive, above and beyond the effect of positive affect, because they evoke reflective immersion. Thus, we demonstrated that nostalgia marketing is not just persuasive because of the positive emotions consumers experience when they see nostalgic stimuli, as practitioners and academics alike have argued. Rather, we showed that nostalgia marketing is also persuasive because it leads consumers to become transported by reflecting on the past.

Theoretical Implications

Our findings contribute to the literature on both nostalgia and narrative transportation. First, our findings offer a better understanding of the process through which nostalgia marketing persuades consumers. Prior research has demonstrated that making people feel nostalgic can have important consequences in marketing contexts. The predominant explanation for why nostalgia persuades has been that nostalgic stimuli directly elicit positive affect, which then transfers to the brand or product being marketed (i.e., affect transfer). In the current work, we demonstrated that nostalgia marketing is also persuasive in part because it encourages reflective immersion: deep and vivid reflection on the past that leads consumers to experience the same feeling of narrative transportation that they get when they dive into an immersive book or movie. This finding demonstrates that positive affect is only one contributor to nostalgia's persuasive effects, and thus that nostalgia is a more complex—and more cognitively intense—persuasive tool than previous research has implied. Consequently, we now have a more accurate

understanding of why nostalgia appeals wield such a strong persuasive influence even when they are not as positive as other appeals (e.g., humor).

Second, our findings add concrete evidence to prior speculation that reflection plays an important role in the experience of nostalgia. Most simple emotions arise as the direct result of stimulus exposure: We see an image of a beautiful beach, a baby, or puppies and instantly feel a little happier. Despite the fact that nostalgia is usually classified as a complex emotion, most work has conceptualized nostalgia the same way: People see an old photograph or remember an event from their childhood and become nostalgic. However, some research has speculated that nostalgia may work differently and hinted that reflection plays a key role in the overall experience of nostalgia (Hepper et al. 2012; Merchant et al. 2013; Muehling and Sprott 2004). The current work provides empirical evidence to support this speculative role of reflection in the nostalgia experience by showing that nostalgic stimuli lead to reflection that is more transporting than reflection on other memories.

Finally, we formally name a phenomenon (i.e., reflective immersion) that may play a role in other persuasive processes. For example, Nielsen et al. (2018) found that when products are novel and difficult to evaluate, consumers try to evaluate them by mentally simulating vivid scenarios in which they or others might use the products. As a consequence, consumers experience narrative transportation while evaluating Really New Products, and this feeling of being transported improves their attitudes toward those products. Our findings build upon and validate their finding that people can experience narrative transportation spontaneously (i.e., without an obvious narrative). More importantly, our work suggests that this phenomenon is not unique to ads for Really New Products. Rather, we find that nostalgic memories similarly lead consumers to experience what we label reflective immersion in this paper. This implies that

reflective immersion may play a larger role in how consumers respond to certain stimuli that encourage reflection or mental simulation—including, but not limited to, advertisements.

Managerial Implications

In addition to making important theoretical contributions, our findings also offer important insights for marketing practice. Managers can benefit in at least two ways from the understanding that nostalgia marketing persuades not just through positive affect transfer but also through reflective immersion.

First, marketing messages that evoke more narrative transportation are not just more persuasive, they also change people's beliefs or attitudes for longer (Appel and Richter 2007). As a result, nostalgia marketing can lead to more profound and enduring persuasive effects than a purely affective process would imply (van Laer et al. 2014). This suggests that nostalgia appeals may be especially effective for building long-term customer-brand relationships and reinforcing brand loyalty. Second, understanding that nostalgia persuades in part through reflective immersion also provides guidance for how and when to use nostalgia appeals in advertising. Specifically, whereas emotional appeals are less sensitive to the environment in which they are presented, our findings suggest that nostalgia appeals are most effective when consumers have the motivation and cognitive resources to deeply reflect on their nostalgic past. This would suggest, for example, that nostalgia appeals will be most effective when presented in long form or print advertising.

In addition to the guidance offered to managers above, our findings also provide a warning for managers who wish to use nostalgia as a positive emotional appeal, consistent with the approach offered by many industry blogs and publications. Our pilot study demonstrated that, consistent with the finding that nostalgia is experienced as a mixed emotion, nostalgia appeals

produced significantly lower levels of positive emotion than humor appeals. This suggests that nostalgia marketing, while still positive, is likely less effective at evoking positive emotion than other appeals.

Limitations and Future Research

In the current work we argued and found evidence that reflective immersion influences persuasion above and beyond the influence of positive emotions. In doing so we focused on the direct role that positive affect played in influencing persuasion. However, in addition to its direct effect on persuasion, it is also possible that positive affect influences the process by which nostalgia persuades in other ways. For example, positive affect could play a role in guiding people to reflect on a nostalgic past in the first place. Just as seeing a movie poster for *Titanic* can directly trigger thoughts about the 1990s (Study 1c), the poster can also directly trigger positive emotions that subsequently encourage people to reflect on the 1990s. Although this falls outside the scope of the current work, we see fruitful opportunities for future research in further documenting how positive affect influences the nostalgic experience generally, and reflective immersion specifically.

The main focus of the current work is to uncover the role of reflective immersion in nostalgia marketing. As such, we created our stimuli and study designs in a way that allowed us to draw specific conclusions about nostalgia marketing. However, we expect that our key finding—that reflective immersion plays an important role in how consumers experience and respond to nostalgic stimuli—is not limited to persuasion. For example, researchers often attribute feelings of social connectedness to the bittersweet emotions that accompany nostalgia (Routledge et al. 2011; Sedikides and Wildschut 2019), yet they usually test this relationship by asking people to reflect on personal nostalgic memories that often include friends, family, and

other loved ones (Hepper et al. 2012; Wildschut et al. 2006). Thus, it may not just be the emotion of nostalgia making people feel more socially connected, but also the specific memories brought to mind when people feel nostalgic. Because empirical work on nostalgia frequently uses the event reflection task, it is often not possible to separate the influence of reflective immersion (the cognitive process) from the bittersweet emotions that accompany nostalgia. While we found that this distinction matters in the domain of persuasion, future studies could also explore the specific role of reflective immersion in how people experience and respond to nostalgia. Researchers may uncover further consequences of reflective immersion that are distinct from nostalgia's emotional components, and, in turn, develop a better understanding for why people experience nostalgia in the first place, and why people respond to nostalgia in certain ways (e.g., with feelings of social connectedness).

Another limitation of the current studies is that we deliberately tried to design our nostalgia appeals the same way that advertisers typically do. Specifically, we used nostalgic pop culture stimuli (e.g., *Backstreet Boys*, *Clueless*, *Friends*) that may evoke a rosier kind of nostalgia that does not involve the same sense of loss that people often feel when reflecting on more personal nostalgic experiences. It is possible that stimuli that elicit a stronger sense of loss (e.g., holidays with young children, or high school glory days) may lead to a different type of reflection from the stimuli focused on in the current work. We speculate in such cases that reflective immersion may play an even stronger role in persuasion, and that the direct influence of positive affect will be lessened. However, we encourage future research to further investigate how different emotions may interact with reflective immersion.

In the current work we proposed and found evidence of a phenomenon we refer to as reflective immersion. This phenomenon may explain why other advertisements and emotions are

persuasive. For example, hope is the desire for an object or outcome that does not exist or that has not occurred. Marketing messages and political campaigns that rely on hope may be effective in part because they encourage people to reflect on hypothetical scenarios that are vivid and realistic enough to evoke narrative transportation. In other words, hope might persuade people in the same way that nostalgia does: through reflective immersion. We see promising potential for future research that explores when and how reflective immersion affects advertising outcomes.

Finally, a surprising finding from Study 1a may also offer a promising opportunity for future investigation. Prior work about the role that reflection plays in people's experience of nostalgia has fallen into two camps: Some researchers have speculated that reflection is a distinct precursor to nostalgia (Batcho 2007; Holak and Havlena 1998; Huang et al. 2016), while others have theorized that reflection and the bittersweet emotions that accompany such reflection are both vital components of the nostalgic experience itself (Hepper et al. 2012; Merchant et al. 2013; Muehling and Sprott 2004). In Study 1a we found evidence supporting the second interpretation: People reported more nostalgia when they immersed themselves into a recent memory rather than remaining detached from it. This finding suggests that deep immersion into a non-nostalgic memory may replicate the reflective immersion that people associate with nostalgic experiences. In other words, asking people to reflect deeply on a memory, even when the memory itself is not nostalgic, may give participants an experience that feels sufficiently similar to how they typically experience nostalgia and thus may be misattributed as such.

Appendices

Appendix A - Essay Study to Develop Dimensions of Nostalgia

We designed this study in order to collect a wide range of nostalgic memories, both cultural and personal. We adapted an event reflection task first developed by Wildschut et al. (2006). In the original version of this task, researchers randomly assigned participants to write about either a nostalgic event from their personal past (nostalgia condition) or an ordinary event that took place last week (control condition). We also randomly assigned participants to a third condition in which we asked participants to write about a memory that we hoped would evoke vicarious, cultural nostalgia.

Procedure. We recruited 301 participants ($M_{Age} = 36.25$, $SD = 12.02$; 52.5% female) on MTurk using Turkprime (Litman, Robinson and Abberbock 2016) in October 2017. All participants saw the same introduction to the study:

In this study, you'll be asked to write about yourself, then asked a few questions afterward. The writing task will take up the majority of the study. We would like for you to try to spend as close to 5 minutes as possible on the writing task, but please spend AT LEAST 2 minutes writing.

We randomly assigned participants to one of three conditions (event reflection: personal nostalgia vs vicarious nostalgia vs ordinary) in a between-subjects design. We were interested in what participants wrote about in the two nostalgia conditions. We only included the ordinary memory condition in order to check that the two nostalgic memory conditions actually made participants nostalgic. After participants started the study, they received one of three sets of instructions, depending on their condition. Participants in the “personal nostalgia” condition read the following instructions:

According to the Oxford Dictionary, ‘nostalgia’ is defined as a ‘sentimental longing for the past.’ Please think of a nostalgic event in your life—a nostalgic event that has personal meaning for you. Specifically, try to think of a past event that makes you feel most nostalgic. Bring this experience to mind. Immerse yourself in the nostalgic experience. How does it make you feel? Then, write about this experience in the space below. Describe the experience and how it makes you feel nostalgic.

Participants in the “vicarious nostalgia” condition saw the following instructions:

According to the Oxford Dictionary, ‘nostalgia’ is defined as a ‘sentimental longing for the past.’ Please think of a nostalgic time from before you were born—a nostalgic time that has personal meaning for you. Specifically, try to think of a past time period that makes you feel most nostalgic. Bring this time period to mind. Immerse yourself in the nostalgic period. How does it make you feel? Write about this time period in the space below. Describe the time period and how it makes you feel nostalgic. (adapted from Wildschut et al. 2006, 986)

Those in the “ordinary” condition saw the following text instead:

Please think of an ordinary event in your life that took place in the last week. Try to bring this event to mind and think it through as though you were an observer of the event, rather than directly involved. Imagine the event as though you were an historian recording factual details (e.g., I got on the number 37 bus). Then, please write about this everyday event in the space below. Write a purely factual and detailed account (e.g., like in a court of law, avoiding emotionally expressive words). (Wildschut et al. 2006, 986)

All participants saw a text box below the event reflection instructions. We only allowed participants to continue to the rest of the study after two minutes. Participants spent an average of 248.41 seconds on the writing task ($SD = 227.93$), and time spent on the task did not vary between condition ($F(2,298) = .25, p = .78$).

Following the event reflection task, participants filled out three Likert items measuring how much nostalgia they were currently feeling (“Right now, I am feeling quite nostalgic,” “Right now, I am having nostalgic feelings,” and “I feel nostalgic at the moment”; 1 = Strongly disagree, 7 = Strongly agree; Wildschut et al. 2006). These items served as a manipulation check. Finally, participants filled out some basic demographic items, read the debrief, and were paid for their participation.

Analysis. We first wanted to make sure that the two nostalgia conditions made people feel nostalgic. To do this, we averaged together the three manipulation check items and tested whether they differed using an ANOVA. Results revealed that a significant difference in nostalgic across the three conditions ($M_{\text{Personal}} = 5.84, SD = .99; M_{\text{Vicarious}} = 5.54, SD = 1.29; M_{\text{Ordinary}} = 3.45, SD = 1.59; F(2,298) = 99.15, p < .001$). Importantly, contrasts revealed that the two nostalgia conditions did not significantly differ from one another in terms of how much nostalgia they elicited ($t(298) = 1.64, p = .10$), but that both nostalgic conditions did elicit more nostalgia than the ordinary memory condition ($t(298) = 13.93, p < .001$). These results assured us that the memories that participants wrote about in the two nostalgia conditions were in fact nostalgic memories.

We next read through the essays to look for common themes across both personal and cultural nostalgic memories. As we expected from our analysis of the academic literature and popular press articles, several participants wrote about the warm feelings that the nostalgic past evokes in them. One participant wrote about the 1950s in fond terms: “When I think of this time I think of happy times and good thoughts. Everything was pleasant in the 50s, including the music.”

Participants also wrote about aspects of the nostalgic past that they or their culture has lost. For example, one participant described nostalgia for summers spent at the local waterpark, and the feelings of loss that this nostalgia evoked: “It's bittersweet to think of such times. Sweet because they were good times, and I remember both them and the people involved fondly. But bitter, of course, because they're gone and can't be retrieved except in my memory.” Several participants who wrote about vicarious/cultural memories described the loss of values that they associate with that time. For example, one participant described the loss of artistic and family values between the 1940s and today: “This era was also a simple and calm one. I fel [sic] like people had more appreciation for the arts and education. The focus on the family was at its height.”

As the last quote highlights, we also noticed that people consistently described the nostalgic past as simple and pure. Themes of simplicity saturated people's personal and cultural memories. For example, participants who described personal memories mentioned how their nostalgic past was free of worries and complexity, as these quotes illustrate:

- “Thinking of these memories makes me nostalgic because I didn't have a care in the world”
- “I just really love the memory of my parents when they were young and when life was (or so it seemed) simpler.”
- “...there was a kind of simplicity and fun in undergrad that I do miss and long for”
- “This entire experience reminds me of the many good friends and times I had with zero worries or concerns that come with adulthood”

Other participants who wrote about cultural/vicarious memories similarly described how people in the nostalgic past lived lives free of many of the complicated issues that we experience today, as these quotes illustrate:

- “I would like to be alive in the 1950s ... Things seemed simpler then, less stuff to crowd your home, less stuff to steal your time.”
- “How things were more simpler [sic] and you didn't have to check your phone over and over and over and worry about work and guns and terrorism.”
- “I think about the mid to late 1800's in America, when settlers were moving west and exploring the western part of the United States. I think about the small wooden homes on the prairies and in the woods, isolated from society ... Grow my own food and not have the constant distractions of modern society constantly pulling on me.”
- “I like the early twentieth century. It was a time with new inventions and a feeling that most anything was possible ... It was both a simple and yet exciting time. Society was much like being a child. Young and hopeful with all sorts of possibilities for your future.”
- “I am nostalgic for the late 80's or early 90's. This was just before technology was about to take off and overtake everyone's lives ... Things are about to change drastically, and that feeling is definitely evident, but for now I can just enjoy this time before things got complicated.”

Thus, as we describe in the main paper, we concluded that nostalgia is not just made up of feelings of warmth and loss. Nostalgia also incorporates a view of the past through “rose-tinted glasses” that abstracts away much of the complexity, worry, and chaos of the past, a subdimension that we refer to as “simplicity.”

Appendix B - How We Refined Our Nostalgia Scale Items

We initially thought that the Nostalgia Scale would contain the following subdimensions: warmth, loss/longing, and memory/schema accessibility. We later added another subdimension: simplicity (see Appendix A for more details on how we came to add this subdimension to the scale). To measure these subdimensions, we developed 33 initial items (see Table C2) that we then presented to two colleagues for feedback. One colleague is an expert on collective memories, while the other is an expert on emotions.

Based on feedback from our colleagues, we eliminated several items from this initial list, including the subdimension of memory/schema accessibility. After discussing this subdimension with our colleagues, we realized that memory/schema accessibility was not a true subdimension of nostalgia, but rather an antecedent of it. We used some of the items measuring this construct, together with feedback from our colleagues, to develop hypothesis 1 in study 5: Consumers who have a more accessible schema for a time period will feel more nostalgia for that time period. Our colleagues also helped us to develop several more items to measure simplicity, loss, and warmth.

Out of this process, we formed a revised list of 28 items to measure three subdimensions of nostalgia: warmth, loss, and simplicity. We tested these items in an exploratory factor analysis, which we detail in study 1a of our main paper. We refined our list of 28 items down to a smaller list of 12 items (four items per subdimension), which we then tested in a confirmatory factor analysis. We detail this analysis in study 1b of our main paper. We eliminated one last item after this study, leaving us with a final list of 11 items.

Appendix C - List of All Scale Items

Subdimension	Item Text	Items Presented to Colleagues for Feedback	Set of Items Used in Study 1	Final Set of Items
Warmth	I have positive feelings about this time.	✓		
	Thinking about this time fills me with wonder.	✓		
	I feel happy when I think about this time.	✓		
	I'd like to return to this time.	✓		
	A lot of things about this time were ideal	✓	✓	
	People back then behaved the way they should	✓	✓	
	I have warm feelings towards this time		✓	
	This time makes me feel calm.		✓	
	This time makes me feel relaxed.		✓	
	I think happy thoughts when I think of this time.		✓	✓
Thinking about this time makes me happy.		✓	✓	
I associate this time with mostly positive things.	✓	✓	✓	
Thinking about this time makes me feel good	✓	✓	✓	
Simplicity	This was a carefree time.	✓	✓	
	This was an innocent time.	✓	✓	
	Life was simpler during this time.	✓	✓	
	There was less evil in the world during this time.	✓	✓	
	I associate this time with less worry.		✓	
	Living was easy back then.		✓	
	This time seems less artificial than today		✓	
	Life was less complicated during this time		✓	✓
	Life was less hectic back then		✓	✓
	There was less chaos back then.		✓	✓
This time was less stressful.		✓	✓	
Loss	This time feels like it was a long time ago.	✓		
	This time feels very far away.	✓		
	It would be impossible to recreate this time.	✓		
	This time cannot be recreated.	✓		
	This time feels out of reach.	✓		
	This time seems better than the present.	✓		
	I feel sad that things aren't like this anymore.	✓		
	Things are very different today than they were then.	✓		
	Things will never be like they were during this time.	✓		
	I wish things today were more like they were during this time	✓	✓	
	This time feels lost, never to return.	✓	✓	
	I feel a sense of loss when I think about this time.	✓	✓	
	I miss the way things were then.		✓	
Life is worse today than it was then.		✓		
I'm sad things are no longer like they were then.		✓	✓	
When I think about this time it makes me sad about the present.		✓	✓	
I would give anything to return to the way we were then.	✓	✓	✓	
Memory/Schema Accessibility	I have a clear idea of what things were like during this time.	✓		
	I have strong thoughts and feelings about this time.	✓		
	I associate this time with certain people.	✓		
	I associate this time with certain places.	✓		
	I can picture what it was like during this time.	✓		
	I often think about this time.	✓		
	This time carries a lot of meaning for me.	✓		
	It's easy for me to think of this time.	✓		

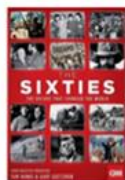
Appendix D - Study 4 Stimuli from the “Choice of Trailer” Task

Instructions

For this study, we are interested in how people choose to view movie or tv show trailers. You will be asked to make choices of actual movie and tv show trailers to watch. You will then be able to watch and listen to those trailers.

Once you've made your choice, click the button below to continue.

Choice of a TV Show



The Sixties explores the landmark era of cultural, political, and technological change during the 1960s, transporting viewers into the decade that spawned the counterculture and the Summer of Love.



The Nineties explores the decade that gave us the Internet, DVDs, and the grunge movement, harkening viewers back to a golden age of television and movies.



In **Pod Save America**, podcast hosts Jon Favreau, Tommy Vietor, Dan Pfeiffer and Jon Lovett bring a “no bullsh*t conversation about politics” to the campaign trail in a four-part special.



United Shades of America follows comedian and political provocateur W. Kamau Bell as he explores communities across America to understand the unique challenges they face.

Please choose which of the above trailers you would like to view:

The Sixties

The Nineties

Pod Save America

United Shades of America

Choice of a Movie



Singles shows what life was like for a group of young people living in Seattle at the height of the grunge movement in the 1990s.



Taking Woodstock follows the lives and times of the people who unintentionally created the most iconic music festival of the 1960s.



Call Me By Your Name is a transcendent tale of two young men who discover the heady beauty of awakening desire over the course of a summer that will alter their lives forever.



American Honey is the story of Star, an adolescent girl from a troubled home, who runs away with a traveling sales crew that drives across the American Midwest selling subscriptions door to door.

Please choose which of the above trailers you would like to view:

- Singles
- Taking Woodstock
- Call Me By Your Name
- American Honey

Participants View Both Trailers

Click play on the YouTube video below to view the trailer. You can adjust the volume in the bottom left corner of the video. The button in the bottom right corner of the video will make the video full screen. When you are finished with the video, click the blue button beneath the video box to continue.

NOTE: You don't have to watch the trailer if you don't want to. Just click the arrow button below when you're ready to continue.

[WHICHEVER TRAILER PARTICIPANTS CHOSE]

Appendix E - Within-Subjects Replication of Study 2

Procedure. We recruited 100 participants from MTurk for \$.50 ($N = 97$ after attention checks; $M_{\text{Age}} = 36.16$; 42.3% female). We first asked participants for their age and used their answer to customize the list of personal nostalgic time periods. We then asked them, in counterbalanced order, “which of the following time periods do you feel the most nostalgic about?” and, “which of the following time periods do you feel the least nostalgic about?”. The list of options included the following: early childhood, mid-childhood, middle school/early teen years, high school/mid teen years, late teen years, your 20s (for those who were 30 or older), and your 30s (for those who were 40 or older). Participants completed the integral nostalgia scale for both their least nostalgic and most nostalgic time periods, also in counterbalanced order.

Results. We ran a 2 (order: most nostalgic first vs last; between-subjects) x 2 (time period: most vs least nostalgic time period; within-subjects) mixed ANOVA. Results revealed that participants scored higher on the integral nostalgia scale when evaluating their “most nostalgic time” than when evaluating their “least nostalgic time” ($M_{\text{High_Nost}} = 4.82$, $M_{\text{Low_Nost}} = 3.54$; $F(1,95) = 40.04$, $p < .001$; $\eta_p^2 = .297$). The means of the highest and lowest nostalgic time period did not significantly differ based on the order in which each scale was presented (interaction: $F(1,95) = .46$, $p = .500$). Order did not significantly interact with nostalgic choice for either the most nostalgic ($F(1,95) = .60$, $p = .733$) or least nostalgic ($F(1,95) = .47$, $p = .800$) time period. The differences between the most and least nostalgic time periods were similar for each dimension of the integral nostalgia scale, which indicates that each dimension validly assesses differences between high and low levels of integral nostalgia.

If consumers only experience nostalgia for the past in general, then we should observe that consumers report similar levels of nostalgia for different time periods (i.e., low within-subjects variance) but that they differ greatly from one another in the extent to which they experience nostalgia across the average of both time periods (i.e., high between-subjects variance). In our main paper, on the other hand, we argue the opposite: that different time periods elicit different levels of nostalgia in people, and that we should see smaller differences in overall levels of nostalgia between one person and the next. We tested this expectation by calculating an intraclass correlation (ICC) score for the sample (Grawitch and Munz 2004). In short, an ICC statistic compares the average range of each participants’ nostalgia (i.e., the difference between their highest and lowest nostalgia scores; MS_w) with the average variance among all the nostalgia scores between participants in the sample (MS_b). Here is the formula for calculating the ICC for any sample:

$$ICC = \frac{MS_b - MS_w}{MS_b + MS_w}$$

Positive ICC scores indicate that a sample displays more variance *between* subjects than *within* subjects (i.e., that consumers vary widely *between one another* in their general nostalgia), whereas a negative ICC score indicates the opposite (i.e., that consumers vary widely *within themselves* in their nostalgia for different time periods). We found an ICC score of $-.282$ for our sample, indicating that our participants displayed more variance in nostalgia ratings *within* subjects than *between* subjects. In non-statistical terms, this means that consumers who are nostalgic for one time period are not necessarily nostalgic for another time; each person

experiences a wide-ranging depth of nostalgia for different times. This in turn implies that we are losing valuable information when we try to measure a consumer's nostalgia for the past in general. Measuring and studying nostalgia proneness can be useful in certain circumstances, but researchers cannot use nostalgia proneness scales to determine why certain time periods trigger nostalgia in certain people, nor can they use general nostalgia proneness measures to accurately predict relevant marketing outcomes like responses to advertisements, purchase intentions, brand attitudes, or product choice.

Appendix F - Measures Used in Studies

Name of the Measure	Studies Used	Source	Text of the Measure	Correlation / Reliability
Narrative Transportation Scale	1a	Adapted from Green & Brock 2000	<p>Please tell us your response to the event you just described. (1 = Not at all, 9 = Very much)</p> <ul style="list-style-type: none"> - While thinking about the event, I could easily picture it taking place. - While thinking about the event, activity going on in the room around me seemed to disappear. - I could picture myself as part of the event. - I was mentally involved in the event while thinking about it. - After thinking about the event, I found it difficult to put it out of my mind. - Thinking about the event affected me emotionally. - I found myself thinking of ways the event could have turned out differently. - I found it easy to keep my mind focused on thinking about the event. - The event is relevant to my everyday life. - The event has changed my life. 	$\alpha = .75$
Nostalgia Manipulation Check	1a, 1b	Wildschut et al. 2006	<p>Please indicate your agreement with the following statements about yourself. (1 = Strongly disagree, 7 = Strongly agree)</p> <ul style="list-style-type: none"> - Right now, I am feeling quite nostalgic. - Right now, I am having nostalgic feelings. - I feel nostalgic at the moment. 	$\alpha = .99$ (1a) $\alpha = .98$ (1b)
Self-Generated Narrative Transportation (Describing a Place)	1b	Adapted from Nielsen et al 2018	<p>Please tell us your response to the writing task you just did. (1 = Not at all, 9 = Very much)</p> <ul style="list-style-type: none"> - While writing, I pictured events that involved the place I was writing about. - While I was writing, activity going on in the room around me seemed to disappear. - I could picture myself in a scene of events involving the place I was writing about. - I was mentally involved in the writing task while thinking about it. - After I finished the writing task, I found it difficult to put it out of my mind. - Thinking about the place affected me emotionally. - I found it easy to keep my mind focused on the writing task. - My thoughts about the place are relevant to my everyday life. - My thoughts about the writing task changed how I think about the place I wrote about. - While thinking about the place I had a vivid image of being in a scenario involving aspects of the place. 	$\alpha = .81$

Self-Generated Narrative Transportation (Reviewing an Ad)	1c, 2, 3	Adapted from Nielsen et al 2018	<p>Please tell us your response to the writing task you just did. (1 = Not at all, 9 = Very much)</p> <ul style="list-style-type: none"> - While reviewing the ad, I pictured events that involved things from the ad. - While I was reviewing the ad, activity going on in the room around me was difficult to notice. - I could picture myself in a scene of events involving things from the ad. - I was mentally involved in the ad while thinking about it. - After I finished looking at the ad, I found it difficult to put it out of my mind. - Thinking about using the product affected me emotionally. - I found it easy to keep my mind focused on thinking about the ad. - My thoughts about the ad are relevant to my everyday life. - My thoughts about the ad changed how I think about the product. - While thinking about the ad I had a vivid image of being in a scenario involving aspects of the ad. 	$\alpha = .90$ (1c; Jolly ads) $\alpha = .93$ (1c; Toms ads) $\alpha = .94$ (1c; Gott & Blandat ads) $\alpha = .91$ (2) $\alpha = .88$ (3)
Brand Attitudes	2, 3	N/A	<p>Please rate the brand "Jolly" on the three criteria below (7-point semantic differential)</p> <ul style="list-style-type: none"> - Unappealing --- Appealing - Unpleasant --- Pleasant - Unlikeable --- Likeable 	$\alpha = .96$ (2) $\alpha = .95$ (3)
Positive Feelings Scale	3	Subscale from the Feelings Scale (Goodstein, Edell and Moore 1990), Adapted by Escalas 2004	<p>How well do the following words describe how you felt while looking at the ad? (0-100 Slider Scale)</p> <ul style="list-style-type: none"> - Active - Alive - Cheerful - Delighted - Energetic - Happy - Pleased - Stimulated 	$\alpha = .95$
Persuasion	4	N/A	<p>[INSERT IMAGE OF BRAND USED IN AD]</p> <p>Please rate the product above on the following three dimensions (9-point semantic differential)</p> <ul style="list-style-type: none"> - Unappealing --- Appealing - Unpleasant --- Pleasant - Unlikeable --- Likeable <p>If the product were available in the U.S. (1 = Not at all, 9 = Very)</p> <ul style="list-style-type: none"> - How interested would you be in trying this product? - How seriously would you consider using this product? - How likely is it that you would try this product? 	$\alpha = .92$

Note: In our analyses, we created each measure by averaging together all of that measure's items.

Appendix G - Survey Stimuli from Study 1c

Screening Question

Please enter your current age (numbers only)

-----Page Break-----

SURVEY LOGIC: ONLY THOSE WHO ANSWERED 30 OR MORE ON THE PREVIOUS QUESTION WERE ALLOWED TO PROCEED

Transition Page

On the next page you will see the first advertisement.

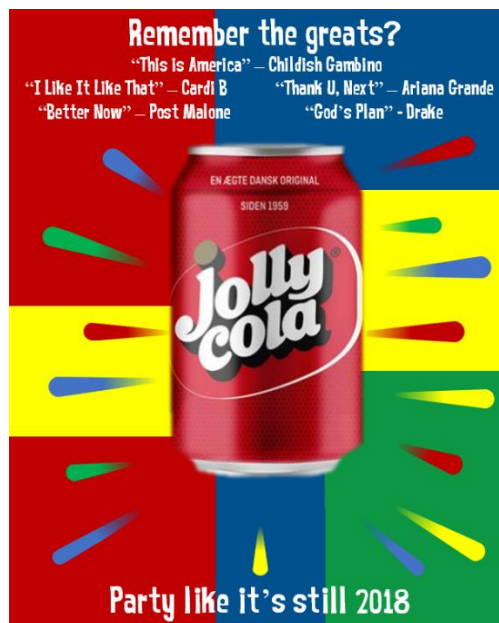
-----Page Break-----

Ad Stimuli

PARTICIPANTS WERE RANDOMLY ASSIGNED TO VIEW ONE “JOLLY COLA” AD, ONE “TOMS CHOCOLATE” AD, AND ONE “GOTT & BLANDAT” AD. THE THREE ADS WERE THEN PRESENTED IN RANDOM ORDER.

Jolly Cola Ad #1: Nostalgic (90s Appeal)

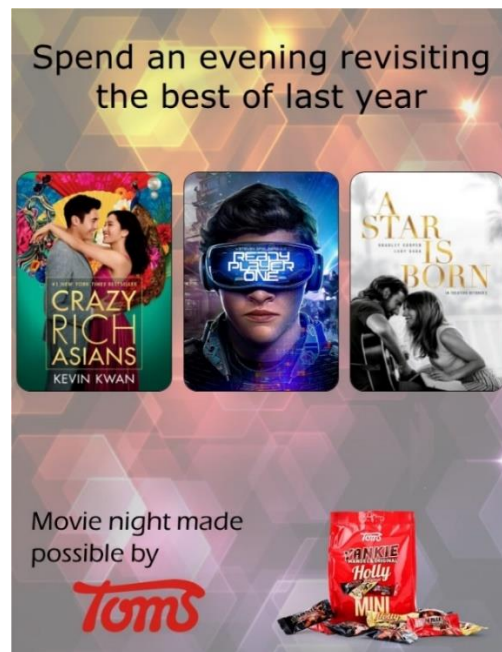
Jolly Cola Ad #2: Modern (2018 Appeal)



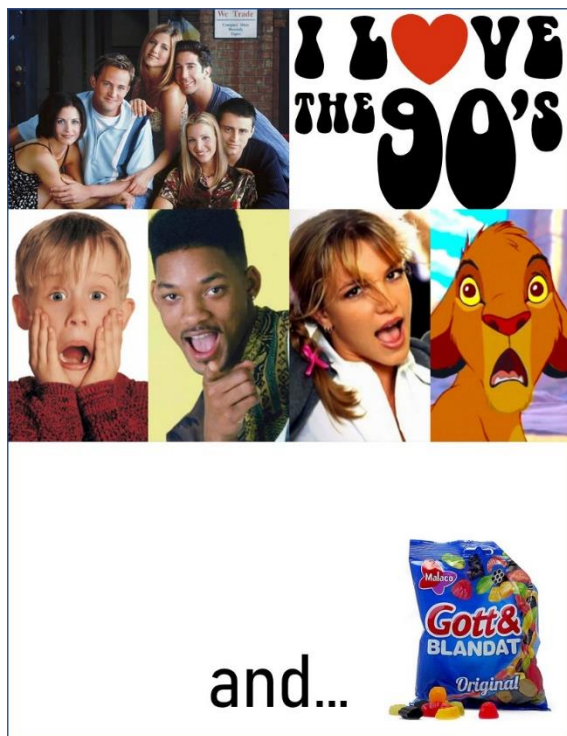
Toms Ad #2: Nostalgic (90s Appeal)



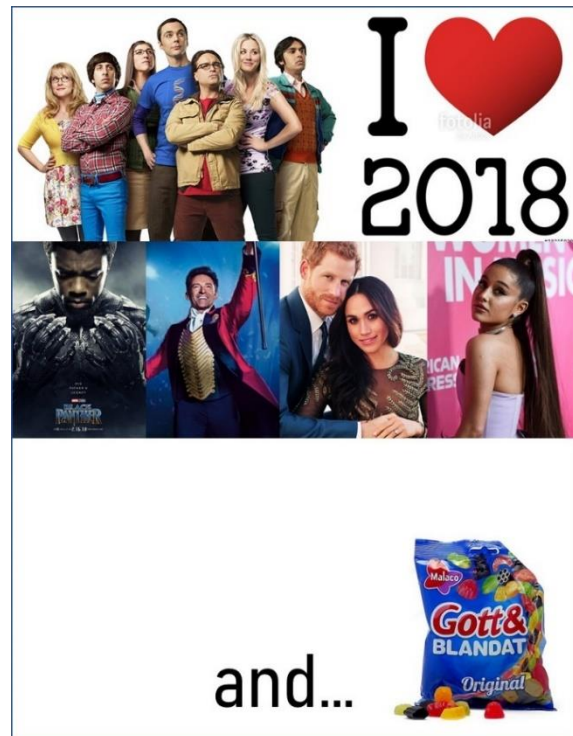
Toms Ad #2: Modern (2018 Appeal)



Gott & Blandat Ad #3: Nostalgic (90s Appeal)



Gott & Blandat Ad #3: Modern (2018 Appeal)



Please tell us your response to the ad you just saw.

	Not at all (1)	2	3	4	5	6	7	8	Very much (9)
I found it easy to keep my mind focused on thinking about the ad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My thoughts about the ad are relevant to my everyday life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While thinking about the ad I had a vivid image of being in a scenario involving aspects of the ad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My thoughts about the ad changed how I think about the product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thinking about using the product affected me emotionally.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

-----Page Break-----

What is your native language?

English

Other (please type the language below)

What is your gender?

Male

Female

How often do you drink soda?

- Every day
- A few times a week
- Once a week
- A few times a month
- Rarely
- I never drink soda

How often do you eat chocolate?

- Every day
- A few times a week
- Once a week
- A few times a month
- Rarely
- I never drink soda

How often do you eat candy?

- Every day
- A few times a week
- Once a week
- A few times a month
- Rarely
- I never drink soda

-----Page Break-----

Did you have any problems or concerns while completing this study? Is there anything else you'd like to tell us?



Appendix H - Study 1c Full Results

Mean Ratings of Narrative Transportation by Position and Brand

	Position 1	Position 2	Position 3
Non-Nostalgic			
Brand 1 (Jolly)	4.93 (.29)	4.68 (.27)	4.34 (.26)
Brand 2 (Toms)	5.34 (.30)	5.18 (.27)	5.01 (.26)
Brand 3 (Gott & Blandat)	4.99 (.26)	5.07 (.30)	4.87 (.30)
<i>Average</i>	<i>5.08 (.28)</i>	<i>4.98 (.28)</i>	<i>4.74 (.27)</i>
Nostalgic			
Brand 1 (Jolly)	5.90 (.29)	5.37 (.29)	5.15 (.29)
Brand 2 (Toms)	6.21 (.28)	5.74 (.30)	5.76 (.28)
Brand 3 (Gott & Blandat)	5.39 (.27)	5.42 (.26)	5.32 (.32)
<i>Average</i>	<i>5.83 (.28)</i>	<i>5.51 (.28)</i>	<i>5.41 (.30)</i>
<i>Nostalgia</i>	<i>F(1,295) = 12.6, p < .001</i>	<i>F(1,295) = 5.02, p = .03</i>	<i>F(1,295) = 7.54, p < .01</i>
<i>Brand</i>	<i>F(2,295) = 2.65, p = .07</i>	<i>F(2,295) = 1.10, p = .34</i>	<i>F(2,295) = 2.47, p = .09</i>
<i>Nostalgia x Brand</i>	<i>F(2,295) = .74, p = .48</i>	<i>F(2,295) = .74, p = .48</i>	<i>F(2,295) = .19, p = .82</i>

Note: Standard errors are in parentheses

Appendix I - Survey Stimuli from Study 4

Introduction

In this first round of today's lab session, you'll be taking two studies. One will test how memory changes over time, and the other looks at how you view advertisements.

-----Page Break-----

SURVEY FLOW: PARTICIPANTS WERE RANDOMLY ASSIGNED TO VIEW THE HIGH OR LOW COGNITIVE LOAD INSTRUCTIONS.

Cognitive Load Manipulation

High Cognitive Load Condition

In this first study, we're going to show you a sequence of letters. You'll be asked to enter these letters in approximately 5 minutes. Please look at the letters below, take as much time as you need to memorize them, then click the button below to continue.

Please do not write them down, type them anywhere, etc. This study is about memory!

Here are the letters to memorize: **GXNTDPLRW**

Low Cognitive Load Condition

In this first study, we're going to show you a sequence of letters. You'll be asked to enter these letters in approximately 5 minutes. Please look at the letters below, take as much time as you need to memorize them, then click the button below to continue.

Please do not write them down, type them anywhere, etc. This study is about memory!

Here are the letters to memorize: **GXN**

-----Page Break-----

Transition Page

You've finished the first part of the memory study. Before you do the second part, we will do the ad study. Remember to continue to hold the letters we showed you in your memory, because we'll ask for them after this study is over.

-----Page Break-----

Introduction to Next Phase of Study

In this next study we are interested in your opinions and reactions to advertisements.

On the next page, you'll see a page with an ad for a real candy brand. Please look carefully at the ad and answer the questions about it.

-----Page Break-----

SURVEY FLOW: PARTICIPANTS WERE RANDOMLY ASSIGNED TO VIEW ONE OF THE TWO ADVERTISEMENTS BELOW.

Ad Stimuli



Nostalgic Ad



Modern Ad

This was placed beneath the ad:

Below, please describe what you are thinking about as you are viewing the advertisement above.

-----Page Break-----

Persuasion Scale



Please rate the product above on the following three dimensions

Unappealing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Appealing
Unpleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleasant
Unlikeable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Likeable

If the product above were available in the U.S.

	Not at all (1)	2	3	4	5	6	7	8	Very (9)
How interested would you be in trying this product?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How seriously would you consider using this product?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How likely is it that you would try this product?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

-----Page Break-----

Participants were asked to enter the letters they had memorized:

It's now time for you to enter the string of letters you had to memorize earlier. Please enter as many of the letters as you can remember in the box below.

-----Page Break-----

How often do you drink soda?

- Every day
- A few times a week
- Once a week
- A few times a month
- Rarely
- I never drink soda

How often do you eat chocolate?

- Every day
- A few times a week
- Once a week
- A few times a month
- Rarely
- I never eat chocolate

How often do you eat candy?

Every day

A few times a week

Once a week

A few times a month

Rarely

I never eat candy

NOTE: DEMOGRAPHIC ITEMS FOR STUDY 4 WERE COLLECTED SEPARATELY WHEN PARTICIPANTS FIRST SIGNED UP FOR THE SUBJECT POOL.

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