# A DYNAMIC AND MULTI-DIMENSIONAL APPROACH TO CONSUMER WELL-BEING

by

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A Dynamic and Multi-Dimensional Approach to Consumer Well-Being

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Consumer researchers are increasingly concerned with the well-being of consumers. In recent years, we have embraced well-being as an independent topic of study, an important implication of marketing practices, and a pursuit predictive of judgment and behavior. Yet, the variety of ways in which we measure and define well-being are increasing and sometimes contradictory and lead to contradictory results. In my dissertation, I propose that consumer well-being is best studied as a multi-dimensional dynamic process.

In the first essay, I use this dynamic conceptualization to examine how well-being changes over the lifespan. This question has received a great deal of attention in psychology, economics, sociology, and philosophy but prior work has produced equivocal results. I contribute to this important debate by testing a new method of measuring and studying well-being, one that measures multiple dimensions of well-being at once and allows each to vary independently. By separately measuring multiple contributors to well-being and examining both individual and aggregate patterns across the lifespan, I find clues as to why previous work has resulted in conflicting findings and I find I am able to explain more variance in judgments of overall well-being than alternative methods of study.

In my second essay, I demonstrate how a dynamic conceptualization of well-being can help researchers to better understand the costs and benefits associated with marketplace phenomena, specifically, hyped events. In 6 studies over 22 hyped events, I find that hype causes people to deviate from otherwise preferred activities and that this deviation is largely detrimental to consumer well-being. I found a single positive influence of hype: it sometimes improves social well-being. Hyped events helped solitary viewers feel connected to others via a shared cultural experience. Building on this insight, two studies conducted before, during, and after Super Bowls 50 and 51 revealed that focusing on the social elements of hyped events increased benefits to well-being compared to focusing on the details of the events. This essay demonstrates the limited benefits and extensive costs to believing the hype, particularly when it causes you to deviate from activities more in line with your values, goals, and preferences.

**Acknowledgement**

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To my family and friends, you have been my sanity so many times through this insanity. Mom, Dad, Lana, Drew, Vishal, Om, Deb, Mark, Lindsey, Sawyer, Zach, Rylan, and Eli - thank you for making me feel human and reminding me what matters. Abby, Brian, Dan, Deeds, and Ellie - you are the most giving, intelligent, inspirational, and kickass group of women I know and sometimes I can't believe I'm lucky enough to count you as friends.

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# Chapter 1. Background

## 1.1 Introduction

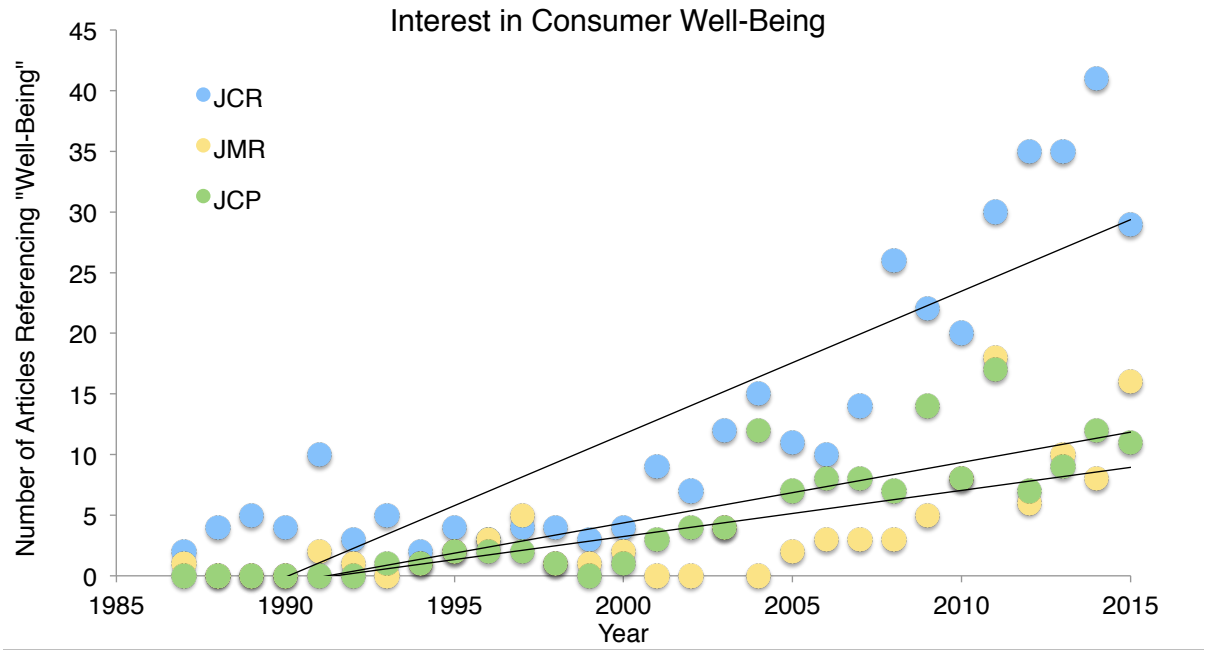
The pursuit of happiness and a good life has been a topic of interest among philosophers, scientists, politicians, marketers, and everyday people across the world and throughout history. Academic interest in the topic has boomed in recent years. However, exactly what researchers and lay people mean by "happiness" and "well-being" has not reached consensus. Indeed, while the majority of academic work on the topic references the complexity of well-being and its multi-dimensional nature, most proceeds to select and defend one aspect of well-being and study it in isolation from other aspects. What questions in the literature might we solve and new insights might we glean by studying multiple aspects of well-being at once?

In my dissertation, I examine well-being in a way that attempts to better capture its complexity. While this approach is doomed to result in findings that are less parsimonious than approaches that define and study well-being in a more singular fashion, I find that it enables researchers to examine the tradeoffs that people make in an attempt to maximize their own well-being in a way that other approaches do not allow. Importantly, I find that accounting for this complexity can integrate seemingly contradictory results and generate new insights.

I contend that marketing as a discipline is uniquely suited to inform this undertaking because marketing researchers are particularly focused on understanding how consumers make tradeoffs and form preferences (Becker 1981; Kahneman and Tversky 1979; Keeney and Raifa 1976; von Neumann and Morgenstern 1947). Consumer researchers not only have the skills to examine well-being in this more dynamic, trade-off focused manner but we stand to uniquely benefit. Products are often open to interpretation; the same experience can be construed to

symbolize and provide very different types of benefits (Hoch 2002; Percival Carter and Williams 2017). Understanding how consumers think about their own well-being also has important implications for understanding behavior more generally, as consumer behavior is often motivated by the desire to maximize well-being. Finally, researchers increasingly reference implications of their research for consumer well-being (see figure 1, details on how figure was created available in appendix 1). If we as a field plan to incorporate consumer well-being as a common implication worth considering, we should try to ensure we accurately report effects.

**Figure 1. References to "Well-Being" in Marketing Journals Over the Past 30 Years**




In my dissertation, I argue for and examine the benefits of a dynamic and multi-dimensional approach to studying consumer well-being. My goal is to demonstrate that this approach augments the existing literature by allowing researchers to identify and better understand instances in which consumer well-being is improved on one or more dimensions but worsened on others. I do this in two essays. In my first essay, I demonstrate how allowing for

additional complexity in our model of well-being can explain previously contradictory findings and lead to new insights about well-being as a general pursuit. Specifically, in this essay, I examine how well-being evolves over the lifespan. In my second essay, I study how marketing efforts can have complex effects on consumer well-being and how marketers can use this information to reframe activities in a way the increases the benefits to consumer well-being. Specifically, in this essay, I examine how hyped media events both help and hinder consumer well-being. First, I briefly review the literature on well-being and support for this more dynamic approach to the topic.

## 1.2 Conceptualizing Well-Being

It would be impossible to summarize the entirety of the scholarship on well-being in a thousand pages let alone a single paragraph. However, it is fair to say that while scholars agree that well-being matters, there is a great deal of debate on both the exact meaning of and the best means of measuring the construct. In the broadest possible sense, most approaches to the study of well-being adhere to either a hedonic or an eudaemonic approach to the topic, where the former stresses the role of pleasure and positive affect and the latter emphasizes the importance of meaning and self-growth in living a good life.

## 1.3 The Traditional Well-Being Debate: Pleasure or Meaning?

People benefit both from feeling good and from feeling like their lives and activities are meaningful. Much of the research on well-being focuses on only one of these two dimensions and refers to that single construct as well-being. Yet, there is good reason to believe that failing to account for either pleasure of meaning can result in a failure to capture what people mean when they say they want to live good, full, and happy lives.

The field of hedonic psychology focuses on defining and measuring well-being as integrated affective experience. Asking a person to what extent they feel more positive or negative in a given moment, accumulating these momentary measures over time, and integrating under this curve is the gold standard when it comes to measuring hedonic well-being. Researchers who focus solely on affective aspects of well-being find that measures of positive and negative affect balance are correlated with more general measures of well-being and life satisfaction, though the correlation tends to be modest (Diener et al. 2010; Kahneman and Krueger 2006; OECD Guidelines on Measuring Subjective Well-Being 2013). Focusing exclusively on affective aspects of well-being can result in more explicit pushback from research participants; respondents often object to the focus on affective experiences during a single day as a measure of well-being, saying that these reports are not representative of how they feel in aggregate (UK ONS 2011).

Studying well-being by focusing on the extent to which people find their lives and activities meaningful is often referred to as taking a eudaemonic approach. When used as a sole predictor, measures of eudaemonic well-being are correlated with assessments of general well-being, but the correlation tends to be even more modest than purely affective measures (Clark and Senik 2011).

Some recent research has begun jointly examining these two dimensions of well-being to better understand specifically how they relate and differ. Results suggest that experiencing more positive than negative affect and finding life meaningful are not mutually exclusive – in fact, they tend to overlap – yet the antecedents of each differ (Baumeister et al. 2013; Keyes, Schmotkin, and Ryff 2002; McGregor and Little 1998; Ryff 1989; Waterman 1993, 2008). Eudaimonic happiness is more strongly related to personal growth, challenge, effort, striving,

stress, worry, anxiety, expression, autonomy, giving to others, and thinking about the past and future whereas hedonic happiness is more strongly related to being young, relaxing, not having problems, receiving or taking, having needs and wants satisfied, and focusing on the present moment (Baumeister et al. 2013; Diener and Lucas 2000; Keyes, Shmotkin, and Ryff 2002; Nix et al. 1999; Ryan and Deci 2000, 2001; Waterman 1993). When an experience can manage to offer both hedonic and eudaemonic benefits, it is particularly valuable; indeed, brands that rate high on both meaning and pleasure tend to be more valuable than brands that rate highly on only one dimension (Percival Carter and Williams 2017).

### 1.4 Well-Being Beyond Pleasure and Meaning

Approaching well-being with an understanding that it is more complex than simply meaning or simply pleasure is common to much of the recent work in positive psychology. Many competing theories of well-being include multiple dimensions. Flourishing (Huppert and So 2013; Seligman 2011), Subjective Well-Being (SWB; Andrews and Withey 1976; Campbell, Converse, and Rogers 1976; Diener 1994, 1996; Diener et al. 1999; Diener and Seligman 2004; Lucas, Diener, and Suh 1996; Shmotkin 1998; Veenhoven 1988, 1996), Psychological Well-Being (PWB; Huppert et al. 2009; Maslow 1968; Rogers 1961; Ryff 1985, 1989; Ryff and Keyes 1995), Self Determination Theory (SDT; Deci and Ryan 2002; Ryan and Deci 2000), and additive life satisfaction (Dolan, Peasgood, and White 2008; Van Praag, Frijters, and Ferrer-i-Carbonell 2003) approaches to measuring well-being all use the strategy of identifying and measuring multiple distinct constructs theorized to contribute to overall well-being. Work supporting each of these theories finds that the dimensions within each approach are distinct and vary independently (Diener et al. 2006, 2009; Diener and Biswas Diener 2008; Diener and Seligman 2004; Keyes et al. 2002; McGregor and Little 1998; Seligman 2011; OECD Guidelines

on Measuring Subjective Well-Being 2013; Park, Peterson, and Seligman 2004; Ryan and Deci 2001).

Consistent with this broad trend in the literature of allowing for a more complex, multi-construct conceptualization of well-being, I propose that a dynamic approach to the topic of well-being is worth undertaking. While such an approach complicates the process of studying well-being, it also offers opportunities to deepen our understanding of the complexities of well-being.

## 1.5 A Dynamic Approach to Studying Well-Being

When people talk about "having it all," they are usually debating whether it is possible to satisfy both career and social goals when the two often seem to be in conflict (Perrewe and Hochwarter 2001). Yet, "having it all" can also mean attempting to satisfy the broader myriad of often competing needs and desires that contribute to well-being. When participants in well-being research indicate that single constructs like pleasure or meaning do not adequately represent their well-being (UK ONS 2011), they are suggesting that researchers need to augment their models. The definition of a dynamic system is any set of elements that change over time and by interactions of the elements. Conceptualizing the pursuit of well-being as a dynamic process is consistent with an emerging trend across many areas of science focused on understanding the simple rules that determine the interactions of elements that give rise to phenomena (Haken 1978; Strogatz 2003; Vallacher, Read, and Nowak 2002; Weisbuch 1992). Within social psychology, dynamic approaches to understanding constructs ranging from emotions (Thagard and Nerb 2002) to decision making (Simon and Holyoak 2002; Townsend and Busemeyer 1995) to personality (Lewis 1997; Read and Miller 2002; Shoda, LeeTiernan, and Michel 2002) have

contributed to our understanding of complex social and psychological phenomena (see Vallacher and Nowak 2005 for a review).

Well-being might be particularly well-suited among psychological constructs for study as a dynamic system. First, a tremendous body of evidence suggests that well-being changes over time and by interaction of elements and thus meets the requirements of a dynamic system (see section 2.3). Second, the well-being literature is full of contradictory findings that a dynamic approach could clarify. The effects of experiences including parenthood, aging, plastic surgery, marriage, spending money on things, and even having money seem to depend not only on situational and individual differences but on how we define and measure what aspect of well-being is affected. If researchers are able to identify unique variation in multiple constructs, we may be able to determine whether inconsistent findings are due to differences in samples, construct selection, or some combination of factors (indeed, this is the major motivation of my second essay). In this way, the additional explanatory power of a dynamic approach to understanding well-being may be worth the decrease in parsimony associated with a more complicated theory. Finally, the sheer amount of data that is available related to well-being makes it suitable for study as a dynamic system. The explosion in interest in measuring and improving well-being in recent years led researchers and policy groups to collect a tremendous amount of data on well-being, often using multiple measures and increasingly, over multiple collections.

I also propose that a dynamic approach to studying well-being more closely approximates consumers' actual decision making process when it comes to maximizing their own well-being. Many investigations of consumer well-being examine how an intervention affects the amount of pleasure a consumer experiences or the effect an intervention has on consumers' assessments of

overall well-being. While these insights are important, they are also limited. For example, an action that increases pleasure might also affect another dimension of well-being and thus, overall well-being. If a study identified an intervention that increased pleasure, the temptation might be to conclude that the increase in pleasure resulted in increased overall well-being. However, the intervention might also have affected participants' sense of meaning, social relationships, or achievements. If the intervention resulted in an increase in pleasure but a decrease on the other dimensions, inferring the positive effect on overall well-being would likely be an error. Similarly, if the intervention led to positive effects on all dimensions, attributing an increase in overall well-being solely to the increase in pleasure would be an error. Investigating effects on multiple dimensions of well-being would reduce such errors. Measuring multiple dimensions also allows researchers to ask questions such as how much should a person prioritize pleasure versus meaning to maximize their own well-being, which better reflects the oft-discussed struggle of trying to "have it all."

## 1.6 Organization of the dissertation

The rest of this dissertation is organized as follows. In chapter 2, I present my first essay, which examines how a dynamic approach to studying well-being can help to explain why previous work has led to seemingly conflicting findings and lead to new insights about one of the longest standing questions about well-being: how does well-being evolve as we age. In chapter 3, I present my second essay examining how a dynamic approach to studying well-being can lead to new insights about the complex effects hype can have on consumer well-being. I then use these new insights to develop strategies for increasing benefits to consumer well-being resulting from engaging with hyped events. I conclude in chapter 4.

# Chapter 2. Essay 1: A Dynamic Approach to Understanding Well-Being Across the Lifespan

## 2.1 Motivation

Understanding what makes a good life and how that changes over the lifespan has been a great debate for millennia. From a consumer behavior perspective, understanding this evolution in well-being is important because as consumers' conceptualizations of well-being evolve, the kind of products they desire and the kind of product appeals that are effective likely also evolve. Appealing to a person who prioritizes feeling good might very well require a different approach than appealing to a person who prioritizes achieving their goals. A better understanding of how people of different ages think about well-being could improve product design, targeting, and marketing communication as well as help consumers to better plan for their future selves and connect with others.

Of course, the question of how well-being changes as we age is also of interest outside of consumer behavior. Researchers in psychology, economics, sociology, and philosophy have all considered variations of this question. Yet, the current literature on the relationship between age and well-being is largely equivocal. One reason for the lack of consensus is that different disciplines and traditions within those disciplines define and measure well-being in different ways – including as affective states, emotional states, and judgments of satisfaction with life in general or with specific domains of life. While it is intuitive that each of these should affect well-being, each is a substantially different evaluation. If I ask you to what extent you feel positive and negative in your daily life, how happy you are, how satisfied you are with your life, and how satisfied you are with your job, you're going to answer each of those questions in a slightly different way. It is perhaps unsurprising, then, that these different approaches fail to converge on a consistent pattern of well-being across the lifespan.

In this paper, I contribute to this important debate by testing a new method of measuring and studying well-being, one that measures multiple dimensions of well-being at once and allows each to vary independently. By separately measuring multiple distinct contributors to well-being and examining both individual and aggregate patterns across the lifespan, I am able to provide initial evidence as to why the literature is full of seemingly conflicting findings and explain more variance in judgments of overall well-being than alternative methods of study. This method also allows me to investigate the effects of different strategies for optimizing well-being, such as attempting to "have it all" versus prioritizing amongst competing dimensions.

## 2.2 Well-Being Over the Lifespan: What We Know

The question of how well-being evolves over the lifespan does not have a simple answer. Research has failed to yield consistent results. Though the most commonly discussed finding is a U shaped pattern, others report an inverse U shaped pattern, cubic pattern, linear effect, cubic effect, or no effect (see table 1 for a sample of recent findings, see also Argyle 2001; Blanchflower and Oswald 2004; Brockman 2010; Carstensen et al. 2000; Diener et al. 1999; Easterlin 2006; Ferrer-i-Carbonell and Gowdy 2007; Stone et al. 2010). In order to understand the diversity of previous findings about the relationship between age and well-being, it is important to first understand the different schools of thought about what well-being is.

### 2.2.1 The traditional well-being debate: Pleasure or meaning?

Many researchers have taken an either or approach to the topic of well-being, defining well-being as either affect-balance or as a more cognitive appraisal associated with general life-satisfaction and feeling one's life has meaning and purpose. To measure the former, researchers use questions like "yesterday, did you feel happy/content/angry/anxious?" or "in general, how happy or unhappy do you usually feel (Fordyce 1988)?" Researchers measuring the latter ask

questions like the Cantril ladder measure, “Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. If the top step is 10 and the bottom step is 0, on which step of the ladder do you feel you personally stand at the present time?” or “taking all things together, how satisfied are you with your life these days?” Unsurprisingly, these two different types of measures, and even the specific questions within each type, often produce different results (see table 1 and Appendix 2 for a more detailed version of table 1 which includes dependent variables and sample characteristics).

**Table 1. Summary of Findings on Well-Being Over the Lifespan**

| Study | Data | Cross-Sectional or Longitudinal | Controls | Finding |
|---|---|---|---|---|
| Alesina, Di Tella and MacCulloch 2004 | US General Social Surveys, Eurobarometer | CS | Yes | **inverted U** |
| Blanchflower and Oswald 2008 | US General Social Surveys, Eurobarometer, UK Labour Force Survey, World Values Survey, Latinobarometer, Asiabarometer | CS | Yes | **U shaped/cubic** Cubic when non-parametric |
| Blanchflower and Oswald 2011 | Eurobarometer 2010 | CS | Yes | **U shaped** as inferred from and inverted U shape between age and prescribed antidepressants |
| Carmel, Shrira and Shmotkin 2013 | Elderly Israelis | CS | Yes | **linear - declining** |
| Clark 2007 | British Household Panel Survey | L | Yes | **U shaped** when controlling for cohort |

| | | | | |
|---|---|---|---|---|
| Clark and Oswald 1994 ad 2006 | British Household Panel Survey and General Health Questionnaire | L | Yes | **U shaped** |
| Costa et al. 1987 | National Health and Nutrition Examination Survey | L | Yes | **flat** |
| Deaton 2008 | 2006 World Gallup Poll | CS | No | **U-shaped** only within English speaking countries, differs in other countries |
| Easterlin 2001 | Probability sample in US | L | No | **flat** |
| Easterlin 2006 | US General Social Surveys | L | Yes | **inverted U** |
| Easterlin and Sawangfa 2007 | US General Social Surveys | L | Yes | **inverted U** for happiness, varying effects for satisfaction with various domains of life (finances, family, health, work) |
| Frey and Stutzer 2002 | Lit Survey | | | **U shaped** |
| Frijters and Beatton 2012 | German Socio-Economic Panel, British Household Panel Survey, Household Income Labour Dynamics Australie | L | Yes | **U-shaped/cubic** U shaped from 20-60 with raw data, controlling for fixed-effects leads to stable happiness from 20-50 with increasing happiness at 60 then decline after 75 |
| Gerdtham and Johannesson 2001 | Swedish Level of Living Survey | CS | Yes | **U shaped** |
| Gwozdz and Sousa-Poza 2010 | German Socio-Economic Panel 1994-2006 | L | Yes | **cubic/U shaped** followed by strong decline among the very oldest. U shape disappears when using fixed- |

| | | | | |
|---|---|---|---|---|
| | | | | effects estimation |
| Hayo and Seifert 2003 | Paul-Lazarsfeld Society Surveys of Bulgaria, Czech Republic, Slovak Republic, Hungary, Poland, Romania, Slovenia, Croatia, Belarus, Ukraine | CS | Yes | **U shaped** |
| Kassenboehmner and Haisken-DeNew 2012 | German Socio-Economic Panel 1994-2006 | L | Yes | **flat** U shape disappears when controlling for fixed effects and respondent experience in the panel |
| Koralewicz Zagorski 2014 | Probability Sample in Poland | CS | No | **linear - declining** |
| McAdams et al. 2012 | British Household Panel Survey | L | No | **cubic – varying** patterns of satisfaction across different domains of life, Cubic for both aggregated domains and general life-satisfaction |
| Mroczek and Spiro 2005 | Veteran Affairs Normative Aging Study | L | Yes | **cubic** inverted U with satisfaction sharply decreasing one year prior to death |
| Myers and Diener 1996 | Lit Survey | | | **flat** |
| Powdthavee 2005 | South Africa OHS 1997 | | Yes | **U shaped** |

| | | | | |
|---|---|---|---|---|
| Stone et al. 2010 | Gallup Poll 2008 | CS | Yes | **U shaped/cubic/varying** global well-being, mild cubic (U-shaped with decline at very end) for happiness and enjoyment, varying effects on negative hedonic well-being (stress, anger, worry, sadness) |
| Stutzer and Frey 2006 | German Socio-Economic Panel 1984-2000 | L | Yes | **U shaped** |
| Van Landeghem 2012 | German Socio-Economic Panel 1985-2007 | L | Yes | **U shaped/flat** U shape vanishes when controlling for individual fixed effects |
| Winkelmann and Winkelmann 1998 | German Socio-Economic Panel 1984-1989 | | Yes | **linear - declining** |
| Wunder, Wiencierz, Schwarze, and Kuchenoff 2013 | British Household Panel Survey and German Socio-Economic Panel Study | L | Yes | **cubic** U-shaped followed by strong decline in old age. Varying effect for individual domains |

### 2.2.2 Using multiple measures generates new insights

Data support the idea that, for most people, both meaning and pleasure are important for well-being but do not fully capture what it means to live well. Individual respondents often push back against the suggestion that their well-being can be summarized by either aggregated daily affective measures or measures which fail to account for affective experience (UK ONS 2011). Neither measures of meaning nor measures of affective experience are sufficiently highly correlated with general measures of well-being to appear exhaustive (Clarke and Senik 2011;

Diener et al. 2010; Kahneman and Krueger 2006; OECD Guidelines on Measuring Subjective Well-Being 2013). Because of the tendency in previous work to focus on only meaning or only pleasure and the growing evidence that both meaning and pleasure matter for well-being, more recent research has taken to using this distinction to explain findings that at first seemed contradictory or irrational.

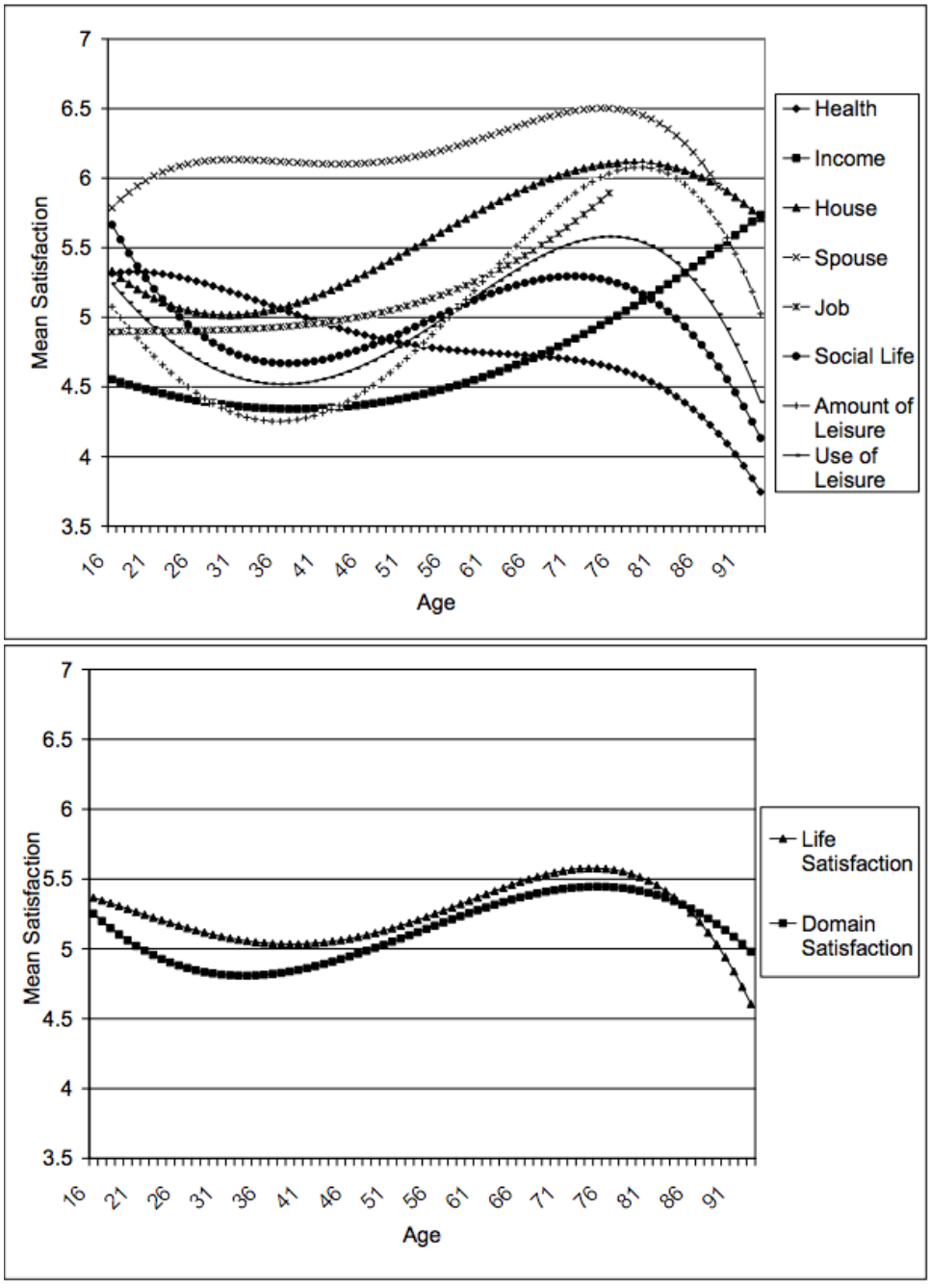
Consider the persistent finding that having children makes people less happy (Dolan, Peasgood, and White 2008). It is true that having children is associated with decreased positive affect (Kahneman et al. 2004; Ross and Van Willigen 1996). Yet, many parents claim that having children ranks among their most positive and impactful life experiences. Having children does seem to increase the stress, pain, sleeplessness, and frustration in life but it also seems to increase the sense of purpose and meaning in life (Nelson et al. 2013; White and Dolan 2009). Indeed, when researchers measured the two constructs simultaneously (controlling for income and financial satisfaction), they found that meaning increased with becoming a parent while affective experience remained unchanged (Haller and Hadler 2006). Measuring both dimensions of well-being made sense of what at first appeared to be conflicting findings. Similarly, researchers have found that jointly considering meaning and pleasure can explain why consumers sometimes seek to prolong affectively unpleasant but otherwise meaningful experiences. Because the pursuit of meaning focuses primarily on long-term benefits, if a consumer's goal is to derive meaning from an experience, the affective quality of the moment matters little. The unique affective costs of meaningful experiences can thus be justified by consumer expectations of enduring benefits associated with meaning (Percival Carter and Williams, 2014).

In the same way that jointly considering both pleasure and meaning can bring clarity to equivocal findings on behavior like having kids or sticking it out through an aversive film, it can also hint at one possible reason for the inconsistent findings on the relationship between age and well-being. Consider the results of two of the very few papers to separately report multiple measures of well-being. Stone and colleagues (2010) found that the pattern of life satisfaction across the lifespan (measured by the Cantril's ladder measure described above) was very different from the pattern of various affective measures. Life satisfaction followed the commonly purported U-shaped pattern, positive affective measures (happiness and enjoyment) were relatively flat, and negative affective measures largely decreased over the lifespan. In other words, a purely affective approach to measuring well-being could not reproduce the life satisfaction judgments of the same sample. Something seemed to be missing. Another group of researchers, McAdams, Lucas, and Donnellan (2012), reported multiple measures of the more cognitive life satisfaction and meaning aspects of well-being. These authors found that satisfaction with various domains of life varied significantly both across the lifespan and across domains. In this research, when these various levels of domain satisfaction were aggregated, the resulting curve much more closely approximated the overall life satisfaction curve than the aggregated affective results did for Stone and colleagues (2010), suggesting that accounting for more and more distinct aspects of well-being can better reproduce judgments of overall well-being.

Closer examination of the results of McAdams and colleagues (2012) further supports the value of a multi-dimensional approach to well-being. For one, measuring and separately reporting multiple dimensions of well-being gives researchers insight into the tradeoffs that people make with regards to their own well-being at various ages. For example, in examining the

results from McAdams et al. (2012, figure 2 below) the complicated relationship between satisfaction with one's job, income, and amount and use of leisure time that evolves over the lifespan is evident.

**Figure 2. Summary Results from McAdams et al. (2012) Showing Domain Satisfaction by Age in Panel 1 and Averaged Domain Satisfaction and Life Satisfaction in Panel 2**



At a more abstract level, the McAdams et al. (2012) results also provide compelling evidence to support the validity of a multi-dimensional approach to the well-being construct. Whether well-being judgments should be approached as a bottom-up model or a top-down model is an ongoing debate. Where a bottom-up model stipulates that individuals evaluate multiple domains of their lives separately and then form an aggregate life satisfaction judgment based on the multiple domain satisfaction judgments, a top-down model stipulates that individuals form an overall life satisfaction judgment and then use that overall judgment to inform domain satisfaction judgments. If well-being judgments are formed using a top-down judgment process, there is little to no value in a multi-dimensional approach; measurements of each dimension would simply be noisy approximations of the overall judgment. If instead overall well-being judgments are formed by considering multiple dimensional judgments, a multi-dimensional approach is of value. McAdams and colleagues finding that the individual domain satisfaction levels differed significantly from one another and from the overall life satisfaction judgment and further that the aggregated individual domain satisfaction levels approximated the overall life satisfaction measure support a bottom-up model, and thus support the validity of a multi-dimensional approach to measuring well-being.

### 2.2.3 Limitations to satisfaction with domains of life as a multi-measure approach

While the work by McAdams and colleagues (2012) supports a multi-dimensional approach to examining well-being over the lifespan, this work extends the McAdams and colleagues approach in several important ways. For one, McAdams and colleagues only used data from respondents who reported being in committed relationships and who were working (or had retired), two major life commitments that undoubtedly shift one's conceptualization of well-being towards one that allows for a committed relationship and work. The authors did this for an

understandable reason; they used measures of relationship and job satisfaction. However, this is problematic because people who either are not working or are not in committed relationships might show very different patterns of domain and overall life satisfaction that the study would not capture. The problem, however, is larger than simply limiting the sample in this way. A second more important issue with the approach taken by McAdams and colleagues is that it leaves a great deal of room for speculation about the contributing psychological mechanisms linking domain satisfaction judgments and life satisfaction judgments.

McAdams and colleagues' used responses to questions about people's satisfaction with their income, job, house, health, social life, amount of leisure time, and spouse. There are two important potential problems with this approach. First, it is not clear what underlies a satisfaction judgment. If one person never sought out social interactions because it wasn't important to him, another sought out social interactions but never found what she was looking for, and a third was satisfied with her rich social life and thought it was important to her well-being it would be hard to account for these different experiences and theories using this approach. Yet, it seems likely that the effect of social satisfaction on overall well-being judgments would vary with each case. For this reason, I measure both satisfaction and importance ratings for each dimension of well-being.

A second potential problem with the approach taken by McAdams et al. is that using judgments about distinct domains of life is limiting and difficult to interpret. Domain judgments are limiting because it is difficult to determine the correct and exhaustive list of domains of life to examine and then to measure the well-being of individuals whose lives do not match that underlying template – e.g. those who are not holding jobs or pursuing long-term romantic relationships –because of age, disability, disinterest, or for other reasons. Even when domain

judgments are limited to a relevant sample – married people with jobs between 18 and 65 years of age – it is not clear how satisfaction within a specific domain of life like a job or a spouse translates to overall well-being, or that this mechanism would be identical for all people. Does satisfaction with one's income, job, and house make life more meaningful, more full of pleasure, or do they affect well-being through other mechanisms? Might one person's satisfaction with her job affect her well-being in one way – say, by making her feel that she's achieved something – while another person's satisfaction with his job affects his well-being in a different way – say by making him feel his life is meaningful or that he has a strong social network? It is for this reason that in my research, I measure multiple *psychological* dimensions of well-being as opposed to satisfaction with distinct domains of life, which are more open to interpretation across people and more limiting in their application.

### 2.2.4 Using psychological dimensions as multiple measures of well-being

Importantly, recent research suggests that while pleasure and meaning are important for well-being, other factors also matter. In selecting the psychological dimensions that I will measure, I drew from the many recent theories of well-being that have sought to identify psychological constructs including but not limited to pleasure and meaning that contribute to well-being (see Flourishing: Huppert and So 2013; Seligman 2011; Subjective Well-Being: Andrews and Withey 1976; Campbell, Converse, and Rogers 1976; Diener 1994, 1996; Diener and Seligman 2004; Diener et al. 1999; Lucas, Diener, and Suh 1996; Shmotkin 1998; Veenhoven 1988, 1996; Psychological Well-Being: Huppert et al. 2009; Maslow 1968; Rogers 1961; Ryff 1985, 1989; Ryff and Keyes 1995; Self Determination Theory: Deci and Ryan 2002; Ryan and Deci 2000; and additive life satisfaction: Dolan, Peasgood, and White 2008; Van Praag, Frijters, and Ferrer-i-Carbonell 2003). I sought to ensure that affective experience and

more cognitive meaning assessments on overall well-being were included, but to also consider additional distinct psychological dimensions of well-being that have been proposed such as achievement, engagement, social satisfaction, autonomy, competence, relatedness, self-acceptance, and environmental mastery.

In contrast to domain judgments like those used by McAdams et al. (2012), these dimensions are meant to capture distinct psychological needs as opposed to means to meet those needs. For example, job satisfaction is not a psychological need; the sense of achievement, sense of meaning, possibility of engagement, positive affect, or relationships that a job provides are psychological needs that a job might be particularly good or bad at satisfying. Similarly, a committed romantic relationship is not a universal psychological need; many people choose to pursue lives rich in social connection, pleasure, meaning, achievement, and engagement without pursuing a committed romantic relationship. Stated differently, the question of what psychological mechanisms underlie well-being at different stages of life is different from the question of what are the characteristics of life (such as being married or employed) and satisfaction with those characteristics at different ages. In my investigation, I consider the former.

I thus measure not only assessments of affective experience and meaning, but assessments of achievement, quality of social relationships, and engagement. These assessments are taken from Seligman's (2011) PERMA (P: positive emotions, E: engagement, R: relationships, M: meaning, and A: achievement) model of well-being. I selected the PERMA model over competing models because it explicitly includes the two most important measures (from an integrating literatures perspective) of meaning and pleasure, and the remaining items

(engagement, relationships, and achievement) are closely related to if not encompassing of the constructs used by other multi-dimensional models.

For the purposes of this work, I use this expanded but not exhaustive set of constructs to balance the goal of gaining more nuanced insights into the evolution of well-being over the lifespan with the need to maintain a reasonable number of measures so as to not exhaust participants. I find using this set of dimensions can help to explain how different approaches researchers take to studying well-being over the lifespan might lead to seemingly contradictory results; the patterns across dimensions differ. The benefits of collecting multiple dimensional measures go beyond being able to examine differences in the patterns of each dimension, however. In the next section, I briefly detail the evidence supporting studying well-being as a dynamic system and explain how collecting multiple measures can aid in such a study.

## 2.3 A Review of Evidence Supporting a Dynamic Conceptualization of Well-Being

People often bemoan the difficulties associated with trying to "have it all;" it seems there are many different activities that might improve our well-being but that pursuing all of them would be difficult or impossible (Campbell, Converse, and Rodgers 1976; Lyubomirsky, King, and Diener 2005; Lyubomirsky et al. 2011; Lyubomirsky, Tkach, and Dimatteo 2006). When we talk about well-being in this way, both as lay people and as researchers, we are implicitly thinking about well-being as something like a dynamic system. The definition of a dynamic system is any set of elements that change over time and by interactions of the elements. So for example, when we talk about parents trading off pleasure for meaning or CEOs trading off strong social support networks for achievement, we are allowing for dynamics in well-being. We are suggesting that when a person evaluates his or her well-being, that evaluation accounts for multiple moving, interrelated dimensions. I propose that people develop strategies which allow

them to maximize well-being given their personal preferences and constraints. I also expect that the variance in strategies for optimizing well-being varies in predictable ways according to demographic characteristics such as age. Before I proceed to detailing my specific hypotheses, I first review a number of findings in the well-being literature that support studying well-being as a dynamic system.

### 2.3.1 General evidence for a dynamic model of well-being

The goals and priorities that people hold can change the way an experience affects their well-being (Caprariello and Reis 2013; Carter and Gilovich 2012; Guevarra and Howell 2014; Howell and Hill 2009). The effect of events ranging from marriage (Gottman and Levenson 1996; Lucas et al. 2003) to making more money (Kahneman and Deaton 2010; Biswas-Diener and Diener 2001; Diener et al. 1993) seem to vary according to individual priorities and baseline satisfaction (Kahneman and Tversky, 1979). The effect of making more money, in particular, has received a great deal of research and produced results that support a dynamic model of well-being. It seems that as people make more money, the marginal benefit of money decreases because people's priorities for their own well-being shift (Delhey 2010; Diener et al. 1993; Diener and Seligman 2004; Frey and Stutzer 2002; Nickerson et al. 2003).

Other researchers have found support for compensatory optimization strategies, such that that being extremely satisfied on one dimension of well-being can offset dissatisfaction on another dimension. Research that approaches the topic through an evolutionary perspective, for example, suggests that having more monetary resources increases power and makes reliance on others less important, thereby reducing the importance of relationships and increasing satisfaction and benefits related to achievement (Vohs and Baumeister 2011; Zhou, Vohs, and Baumeister 2009). Consistent with the idea that financial satisfaction can offset dissatisfaction

with relationships and vice versa, numerous findings demonstrate that the two factors often move in opposite directions. Thinking about money causes people to spend more time working and less time socializing, while thinking about time causes people to spend less time working and more time socializing (Mogilner 2010; Vohs, Mead, and Goode 2006). When you make people feel good about their social relationships, they are less interested in money and work (Lasaleta, Sedikides, and Vohs 2014; Vohs, Lasaleta, and Chaplin 2015) but when you make people feel bad about their social relationships, they are more interested in money (Zhou et al. 2008). Money also seems to protect people from the negative effects of stressful life experiences more generally. When people have few monetary resources, having children decreases their well-being (Dolan, Peasgood, and White 2008). Not having enough money also increases the negative effects of being alone, divorced, or sick (Kahneman and Deaton 2010). It seems people can also offset dissatisfaction with finances with satisfaction on other dimensions, such as having strong relationships, a job that leads to a sense of achievement, or a religious practice that provides a sense of meaning (Dehejia, DeLeire, and Luttmer 2007; Diener et al. 2010; Clark and Lelkes 2005).

The effect of more explicitly prioritizing amongst dimensions on overall well-being is not clear and there is very little work examining this relationship. Wiese and Fruend (2000) are an exception, and found that young adults balancing work and family goals were better off when they prioritized one and delayed the other. Thus, I expect to find that people and ages with greater prioritization report higher overall well-being. However, other work on prioritization provides competing support for this prediction. Generally speaking, feeling as if one does not have the time or resources to meet all of one's goals (constraint) produces stress, negative affect, diminished cognitive capacity, discounting of the future, and a focus on the near term (Haushofer

and Fehr 2014; Mani et al. 2013; Shah, Mullainathan, and Shafir 2012). Decreasing the perceived importance of a competing goal (prioritizing) should thus reduce perceived constraint and associated negative effects. On the other hand, other research finds that sacrificing less important goals (priority planning) feels more costly than stretching the same resources (efficiency planning; Fernbach, Kan, and Lynch 2014), thus suggesting that prioritizing might backfire and result in decreased overall well-being.

### 2.3.2 Evidence for dynamic approaches to well-being over the lifespan

There is a great deal of evidence suggesting that how people define and pursue distinct aspects of well-being changes as they age (Alter and Hershfield 2014; Carstensen 2006; McKennell 1978; Williams and Drolet 2005). Older people crave different types of experiences than younger people. As we grow older, we become more interested in spending time with people who we feel emotionally close to and less interested in spending time with interesting but distant people (Fredrickson and Carstenson 1990; Carstenson 2006; Mason et al. 2014). Extraordinary experiences and feeling excited have a greater effect on well-being for younger consumers, while older consumer benefit more from ordinary experiences and feeling calm or peaceful (Bhattacharjee and Mogilner 2014; Mogilner, Aaker, and Kamvar 2011; Mogilner, Kamvar, and Aaker 2011).

The way in which people think about and try to improve their well-being also changes over the lifespan. Older adults are more likely to change either their assessment of their current state or their goal state so that that the two are more comparable; younger adults are less likely to make either adjustment (Argyle 2001; Cheng 2004; Ryff 1991). This adjustment process leads to an interesting tendency among older adults to devalue knowledge acquisition and place greater value on socioemotional goals (Carstensen, 1991, 1995; Carstensen and Turk-Charles, 1994;

Carstensen et al., 1999). Charles and Carstensen's (2009) explanation for this "socioemotional selectivity" points directly to a dynamic strategy for optimizing well-being over the lifespan. The authors suggest this tendency occurs because as people reach the end of their lives, they shift their focus to things that will pay off "in time" like spending time with others as opposed to things that may not pay off "in time" like learning a new language or other forms of achievement (see also Loewenstein 1999).

## 2.4 Hypotheses Examining the Validity, Insight, and Formulation of this Dynamic Approach

The findings detailed in section 2.3, combined with the equivocal findings on the evolution of well-being over the lifespan, motivate this study. The purpose of the study was to examine nine specific hypotheses evaluating the unique contributions a dynamic approach to studying well-being might provide.

First, I planned to examine whether the results supported a bottom-up or top-down model of well-being. I begin with this examination because the literature provides strong but not unanimous support for a bottom-up approach to studying the evolution of well-being. I also start with this examination because if the results do not support a bottom-up approach, it will affect my interpretation of later hypotheses. If the results support a top-down model of well-being – suggesting that the dimensional measures are nothing more than noisy approximations of the initial overall well-being judgment – further examination of the individual dimensional measurements would offer few benefits and reduce the validity of later hypotheses. Thus, I expect to find support for a bottom-up model of well-being according to hypotheses 1A and 1B.

**H1A**: The patterns of the PERMA dimensions across the lifespan will significantly differ.

**H1B**: The overall well-being assessment across the lifespan will significantly differ from the PERMA dimensions.

Second, I examine the benefits of considering additional dimensions of well-being. Many studies of well-being examine positive emotions or meaning, and sometimes both. Adding dimensions beyond meaning and pleasure by definition reduces the parsimony of my approach to studying the evolution of well-being over the lifespan. It is essential that I determine whether this more complex approach leads to a better prediction of overall well-being assessments. I evaluate the marginal benefit of this additional complexity by testing the following specific hypotheses.

**H2A**: Adding measures of satisfaction with engagement, relationships, and achievement to a model predicting overall well-being with pleasure and well-being will reveal that all five measures are significant predictors of overall well-being.

**H2B**: A model predicting overall well-being judgments using satisfaction measures for each of the five PERMA dimensions will have a greater adjusted $R^2$ and a lower AIC than a model predicting overall well-being with only satisfaction measures for pleasure.

**H2C**: A model predicting overall well-being judgments using satisfaction measures for each of the five PERMA dimensions will have a greater adjusted $R^2$ and a lower AIC than a model predicting overall well-being with only satisfaction measures for meaning.

**H2D**: A model predicting overall well-being judgments using satisfaction measures for each of the five PERMA dimensions will have a greater adjusted $R^2$ and a lower AIC than a model predicting overall well-being with only satisfaction measures for pleasure and meaning.

Third, I examine the effect of having clear versus less clear priorities amongst the PERMA dimensions on overall well-being. While this prediction has received very little attention in the well-being literature (see Wiese and Fruend 2000 for a notable exception which focused on work and family goals), many findings support the idea that there are individual differences in the effectiveness of various interventions on overall well-being. One possible reason for these individual differences is that some aspects of well-being might be more important to specific people or to people of specific ages. Measuring not only individuals' satisfaction on multiple dimensions but how they rate the importance of multiple dimensions will allow me to examine whether people who indicate prioritizing amongst dimensions to a greater degree report greater overall well-being.

**H3A**: People with higher prioritization amongst PERMA dimensions (measured as the standard deviation amongst the five importance ratings) will report greater overall well-being.

**H3B**: Ages at which people on average report higher prioritization amongst PERMA dimensions (measured as the standard deviation amongst the five importance ratings) will correspond with greater overall well-being.

Finally, I determine whether simply averaging the distinct dimensional measures of well-being or taking into account the individual importance ratings results in a better approximation of overall well-being assessments. I expect that the latter method, which will weight satisfaction ratings by individual importance before averaging, will serve as a superior predictor of overall well-being and thus support a more dynamic approach to studying well-being.

> **H4**: A model predicting overall well-being judgments with weighted averaged satisfaction on the PERMA dimensions will result in a greater adjusted $R^2$ and a lower AIC than a model predicting overall well-being judgments using only the averaged satisfaction on the PERMA dimensions.

## 2.5 Study

To examine how individual and societal theories of well-being change over the lifespan, I recruited 1,210 participants from a Qualtrics Behavioral Research Panel. The sample was evenly split between men and women, utilized a nationally representative distribution of ethnicities, and was evenly sampled across four age brackets ranging from 18-32, 33-44, 45-64, and over 65 with the youngest participants being 18 and the oldest being 100 (see appendix 3 for more details).

After reading the informed consent document, and before proceeding to any individual or general questions, all participants read the following instructional text (which was adapted from instructions widely used in the pre-tests discussed below as well as in the studies reported in Chapter 3).

> In this study, we are interested in what you think is important for well-being. We will ask you to think about five distinct dimensions of well-being. The dimensions are:

**Positive Emotions**

By positive emotions, we mean feeling good more often than bad in the moment and doing things that you enjoy because they bring you pleasure.

**Engagement**

By engagement, we mean fully engaging with activities to the point where you lose yourself in those activities.

**Relationships**

By relationships, we mean starting and maintaining strong social ties with others.

**Meaning**

By meaning, we mean feeling like your life is meaningful, feeling fulfilled, feeling like your life has purpose.

**Achievement**

By achievement, we mean accomplishing the goals you set for yourself.

This text was available on every page of the study that required participants to form a judgment about any of the five PERMA dimensions. Consistent with the method used in pre-tests, I asked participants to indicate whether they understood and agreed with the five dimensions provided and if they would like to add any additional dimensions that did not fall under the five provided. Twenty-four participants indicated that they did not agree with the PERMA dimensions. Because of a coding error, all participants were required to type something in the box where participants could suggest a new dimension. In pilot tests, I had excluded participants based on these responses but do not do so here because the rate of agreement with

the PERMA dimensions was consistent with pretest results. I include all responses in all analyses and excluded no participants based on responses to either of these questions.

Participants then rated their overall well-being, indicated how satisfied they were with each of the PERMA dimensions, and indicated how important each of the PERMA dimensions was for their well-being on scales ranging from 0-100 before responding to additional demographic measures.

### 2.5.1 Pre-Tests

I ran multiple small studies and pilots of the measures used in this study testing the formatting of questions and participant reactions to the flow of the study. None of the pretests had a sufficiently large sample or sufficient variance across the lifespan to report or draw concrete predictions from, however, I do feel confident in interpreting reactions to the design and phrasing. Nine hundred thirty-two subjects in various studies received instructions that asked them to consider the five PERMA dimensions of well-being, to indicate understanding, and to indicate if the five dimensions seemed sufficient. Ninety-six percent of respondents indicated that they understood the distinctions between the dimensions based on the description and only 21 indicated that they felt the dimensions were not sufficient (18 indicated that religion should be a separate dimension, 2 indicated that health should be a dimension, and 1 indicated that "childhood" should be a dimension).

### 2.5.2 Analyses

I report all analyses using the full sample and not controlling for any demographic effects. Controlling for demographic effects resulted in some demographics being significant but did not change the interpretation of the results.

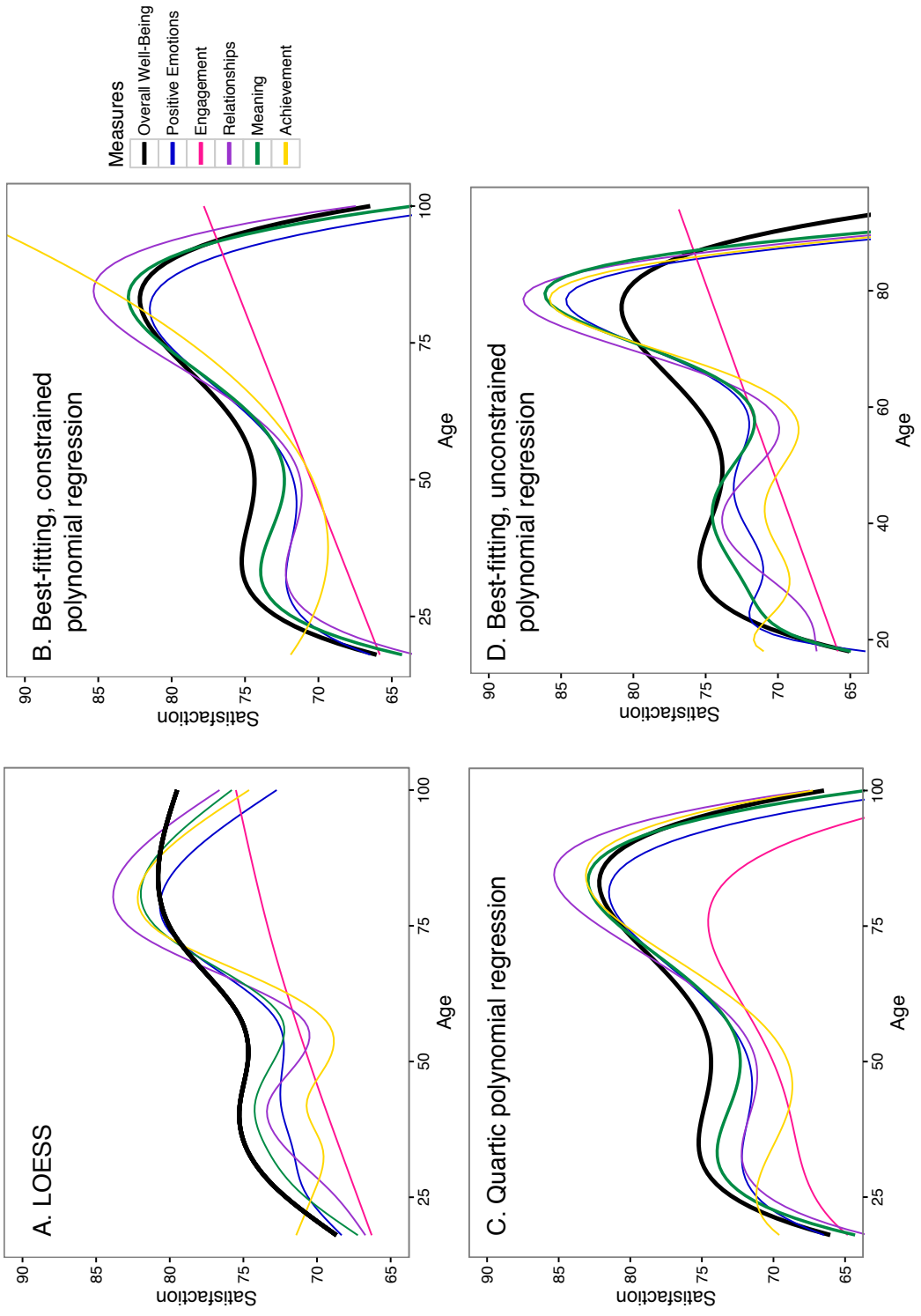
#### *2.5.2.1 Hypotheses 1A and 1B: Support for a bottom-up model of well-being*

**H1A**: The patterns of the PERMA dimensions across the lifespan will significantly differ.

**H1B**: The overall well-being assessment across the lifespan will significantly differ from the PERMA dimensions.

I first examined whether the overall trajectories for each domain of well-being appeared to provide initial support for a top-down or bottom-up conceptualization of well-being. I predicted that the trajectories of each domain would differ from each other and from the overall well-being judgment, supporting a bottom-up conceptualization. I examined this pattern of effects using two different analyses, non-parametric locally estimated regression and parametric polynomial regressions. I first examined the non-parametric regression to examine the pattern of the data when no form was imposed. The results of this regression appear in figure 3, panel A below and are consistent with pretest results. While the functions for each measure do not diverge wildly, the results suggest that different dimensions of well-being evolve in distinct ways over the lifespan. The results also provide clues as to what might be driving the divergent results in the well-being literature. For example, if the range of ages sampled had been closer to 30-80 instead of 18-100, the results for most measures would tend to support the commonly found U-shaped function of well-being by age, with the lowest levels of well-being occurring in middle age. Similarly, a study that measured well-being as positive emotion versus a study that measured well-being as sense of meaning would find different patterns of "well-being" in the first fifty years of life.

**Figure 3. Overall Well-Being Judgments and Satisfaction with PERMA Dimensions By Age Using Four Different Modeling Approaches**



To further examine these patterns of well-being over the lifespan, I next examined the results produced by fitting a series of more typical polynomial regressions for each measure of well-being. I evaluated model fit by examining $R^2$ and AIC, and when $R^2$ and AIC did not agree, I went with the more conservative AIC to determine the best fitting model. When I constrained the order of the age polynomial to be no greater than a quartic function – the highest order polynomial found in published research on the relationship between age and well-being – the results supported a quartic age effect for overall-well-being, positive emotions, relationships, and meaning; a linear age effect for engagement; and a quadratic age effect for achievement. The model estimates appear in figure 3, panel B. While the results of this more typical analysis approximated the non-parametric results, the predictions differed significantly for some measures (namely achievement). I also present results for each dimension by the best fitting overall well-being polynomial regression, quartic in figure 3, panel C. The results of this analysis show that even when fit with the same polynomial function, patterns of satisfaction with engagement and well-being across the lifespan differed from the other dimensions and from the overall well-being assessment. I next examined the fit of higher order polynomials.

Finally, I examined the data by determining the best-fitting polynomial regression. The results changed as seen in figure 3, panel C. In this case, the overall well-being model remains quadratic, engagement remains linear, and every other measure of well-being was best represented using a seventh degree polynomial function of age. This result, while certainly less parsimonious than the result constraining functions to no higher order than quartic, more closely approximated the non-parametric model.

This initial analysis led me to two conclusions: first, that the evolution of well-being appeared to be more complex than much of the prior literature suggests and second that support

for the bottom up conceptualization of well-being depends to an extent on the analysis used. Examining data using lower order polynomial regressions results in more equivocal support for a bottom-up model of well-being. However, using either non-parametric approaches to modeling the data or allowing for higher-order polynomial regressions provides more consistent support for a bottom up approach; the functional form of the various dimensions and of overall well-being judgments differ to a greater extent when the model allows for less typical functional forms.

Because this research is centered on identifying and better understanding the complexity of well-being, evaluating the fit of seventh order polynomials is not so ridiculous. However, this work is intended to contribute to better understanding previous work and informing future work, where seventh order polynomials might be prohibitive. To that end, I hope that other researchers can examine these results, identify the information lost when more parsimonious models are used, and determine the appropriate balance of parsimony and accuracy for their own questions.

#### *2.5.2.2 Hypotheses 2A – 2D: Support for predicting overall well-being using PERMA*

**H2A**: Adding measures of satisfaction with engagement, relationships, and achievement to a model predicting overall well-being with pleasure and well-being will reveal that all five measures are significant predictors of overall well-being.

**H2B**: A model predicting overall well-being judgments using satisfaction measures for each of the five PERMA dimensions will have a greater adjusted $R^2$ and a lower AIC than a model predicting overall well-being with only satisfaction measures for pleasure.

**H2C**: A model predicting overall well-being judgments using satisfaction measures for each of the five PERMA dimensions will have a greater adjusted $R^2$ and a lower AIC than a model predicting overall well-being with only satisfaction measures for meaning.

**H2D**: A model predicting overall well-being judgments using satisfaction measures for each of the five PERMA dimensions will have a greater adjusted $R^2$ and a lower AIC than a model predicting overall well-being with only satisfaction measures for pleasure and meaning.

To examine my second set of hypotheses, that including factors other than positive emotions and meaning will add significantly to the predictive power of models attempting to understand overall well-being judgments, I compared models predicting overall well-being with only pleasure, only meaning, both pleasure and meaning, and finally a model including all five dimensions of the PERMA model. I expected that each PERMA dimension in the model would be significant and positive and that the $R^2$ and AIC values would suggest that including each of the five dimensions added enough predictive value to the model to justify including additional predictors. Indeed, the results of this analysis (see table 2, below) confirmed my expectations. While positive emotions and meaning alone or together were significant predictors of overall well-being, including the additional PERMA dimensions resulted in each being a significant predictor. Furthermore, the adjusted $R^2$ and AIC values for each model suggested that the additional explanatory power of including all five PERMA dimensions justified the loss in terms of parsimony.

**Table 2. Comparing Results and Fit of Four Models Predicting Overall Well-Being**

| Measures | | estimate | df | *t* | *p* | Adjusted R^2 | AIC |
|---|---|---|---|---|---|---|---|
| **Model 1** | postive emotions | 0.63 | (1,208) | 37.19 | <.0001*** | 0.5334 | 6,200.83 |
| **Model 2** | meaning | 0.54 | (1,208) | 31.98 | <.0001*** | 0.4580 | 6,555.79 |
| **Model 3** | positive emotions | 0.44 | (1,207) | 19.47 | <.0001*** | 0.5871 | 6,137.23 |
| | meaning | 0.26 | (1,207) | 12.58 | <.0001*** | | |
| **Model 4** | positive emotions | 0.35 | (1,204) | 14.19 | <.0001*** | 0.6048 | 6,003.91 |
| | meaning | 0.15 | (1,204) | 6.11 | <.0001*** | | |
| | engagement | 0.07 | (1,204) | 3.46 | .005** | | |
| | relationships | 0.05 | (1,204) | 2.50 | .01* | | |
| | achievement | 0.10 | (1,204) | 4.63 | <.0001*** | | |

#### *2.5.2.3 Hypotheses 3A and 3B: Prioritizing amongst PERMA dimensions associated with decreased overall well-being, especially among older participants*

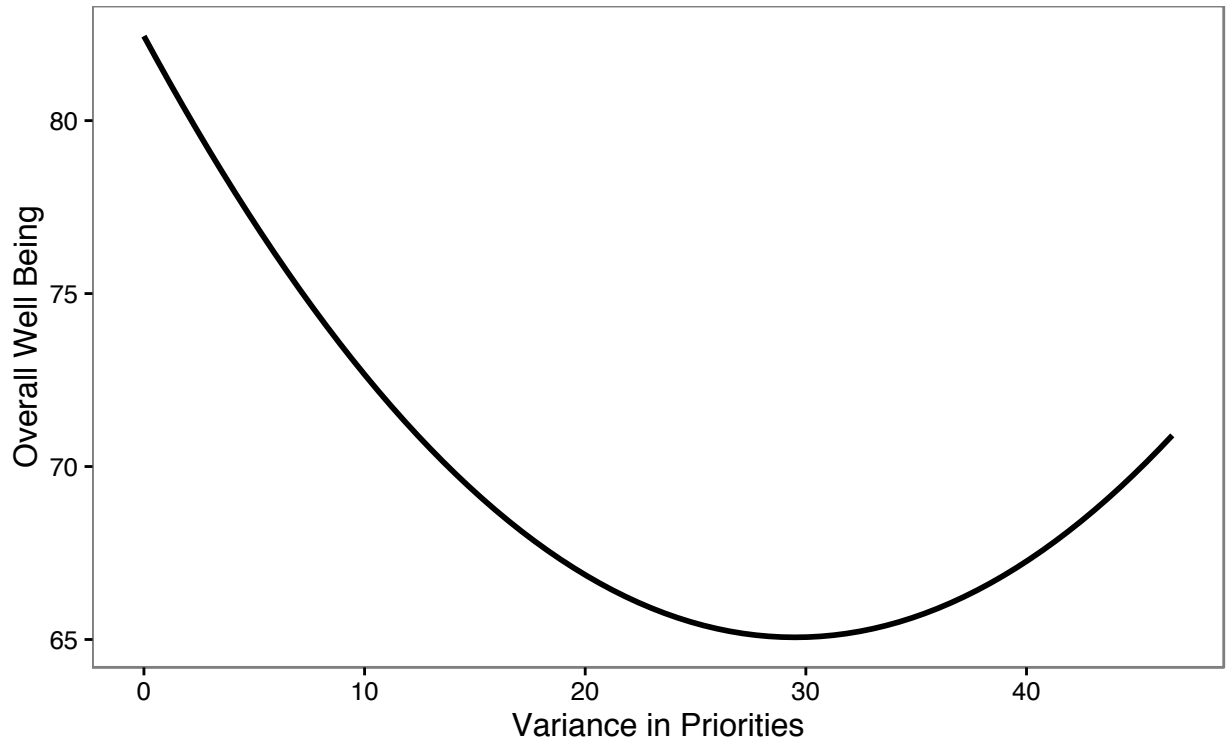
**H3A**: People with higher prioritization amongst PERMA dimensions (measured as the standard deviation amongst the five importance ratings) will report greater overall well-being.

**H3B**: Ages at which people on average report higher prioritization amongst PERMA dimensions (measured as the standard deviation amongst the five importance ratings) will correspond with greater overall well-being.

Next, I examined my third set of hypotheses, that having more versus less clear prioritization amongst dimensions would lead to greater overall well-being. To examine this question, I examined variation in participants' responses on the importance measures for each dimension of well-being. Specifically, I calculated the standard deviation in every participant's ratings for the five dimensional measures (M = 8.52, sd=8.22). When I examined the relationship

between individual differences in variation in importance ratings and overall well-being, I found a significant quadratic effect and a significant linear effect (quadratic F(1,207) = 14.81, p=.0001; linear F(1,207)= 86.92, $p$ <.0001; see figure 4). Counter to my hypothesis, the relationship between higher variation in priorities and overall well-being was significant and negative. While the significant quadratic effect revealed that having high as opposed to moderate variation in priorities resulted in greater overall well-being, participants who reported the lowest variation in priorities reported the greatest overall well-being.

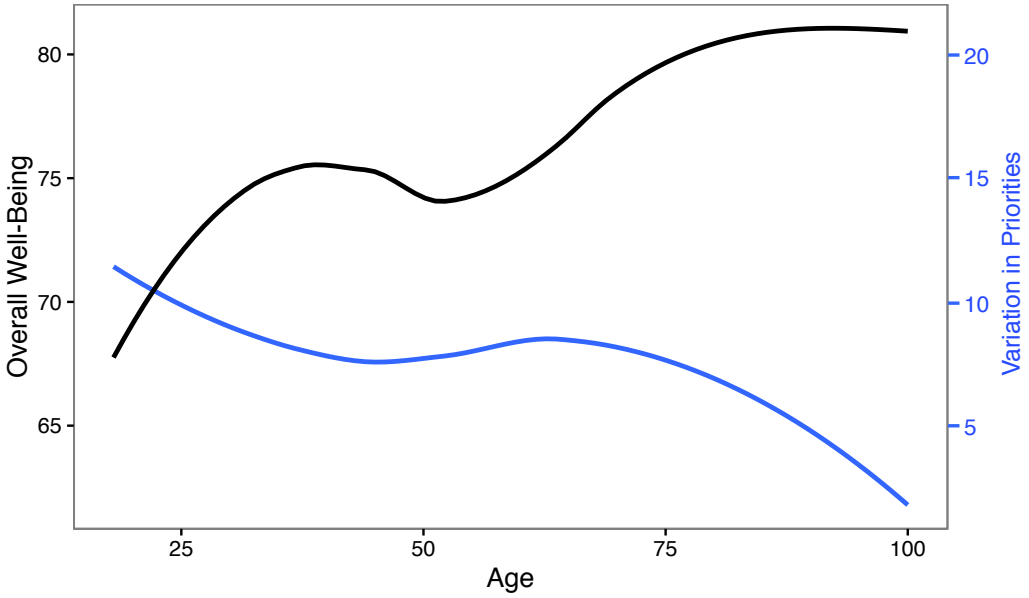
**Figure 4. Overall Well-Being by Variation in Prioritization**




I continued to investigate the relationship between variance in priorities and overall well-being by testing whether the relationship varied by age. Age and variation in priorities were significantly negatively correlated (correlation = - .08, p =.007) such that the youngest

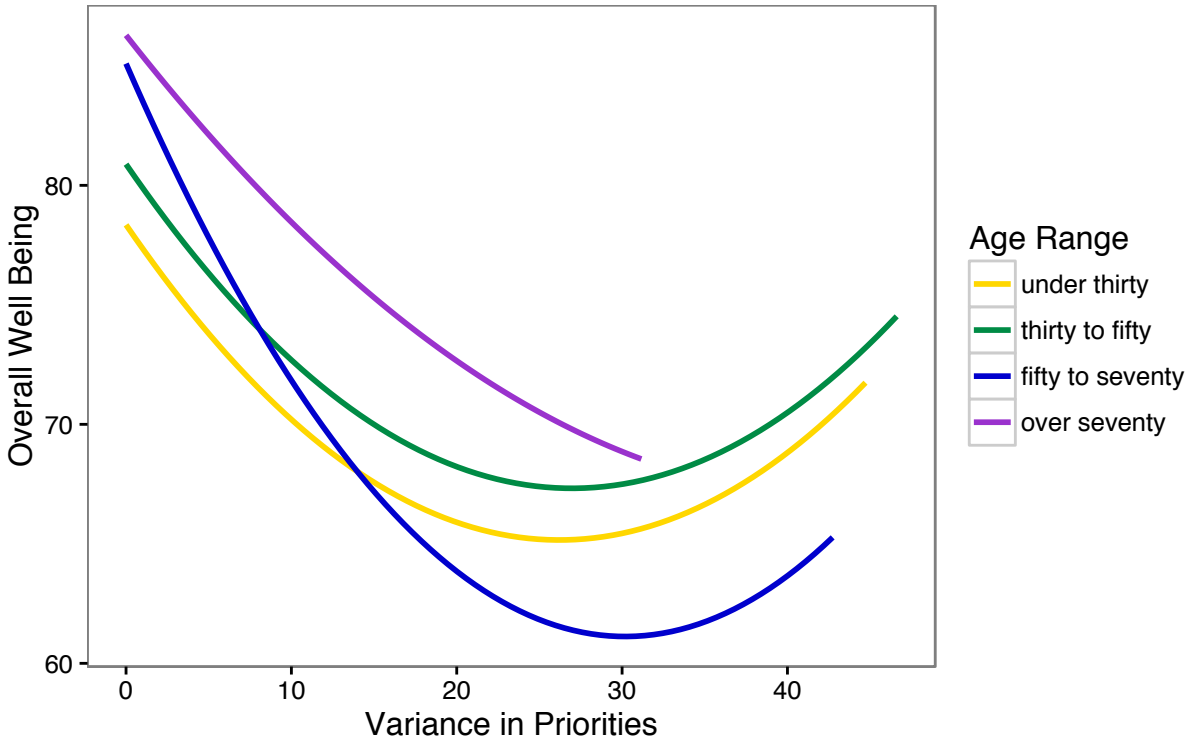
participants reported the highest variation in priorities and the lowest overall well-being with that pattern reversing over the lifespan (see figure 5).

**Figure 5. Overall Well-Being and Variation in Prioritization by Age**




I then examined whether the negative effect of variation in priorities on overall well-being held across the lifespan. I found that the negative effect largely held, but that the quadratic variance effect interacted with age ($F(1, 1{,}204) = 7.01$, $p = .008$). The results of this analysis suggest that the quadratic effect is strongest among younger participants; among young participants, there was no significant difference between participants with the highest and lowest variation in priorities, but moderate prioritization strategies resulted in significantly lower overall well-being. However, among older participants, this quadratic effect slowly disappeared. These results are visually represented in figure 6 below.

**Figure 6. Overall Well-Being by Variation in Prioritization by Age**




### *2.5.2.4 Hypotheses 4: Aggregated PERMA better predicts overall well-being compared to weighted PERMA*

**H4**: A model predicting overall well-being judgments with weighted averaged satisfaction on the PERMA dimensions will result in a greater adjusted $R^2$ and a lower AIC than a model predicting overall well-being judgments using only the averaged satisfaction on the PERMA dimensions.

Finally, I examined my last hypothesis that weighted additive PERMA scores would better approximate overall well-being compared to averaged PERMA scores. The results did not support my hypothesis. In fact, a model predicting overall well-being using averaged PERMA scores resulted in both higher adjusted $R^2$ values and lower AIC values (see table 3). The results

suggest that there is no marginal benefit to accounting for individuals' importance weights on these dimensions if the goal is to predict overall well-being.

**Table 3. Comparing Results and Fit of Averaged and Weighted Averaged Composite Measures Predicting Overall Well-Being**

| Predictor | estimate | *t* (208) | *p* | Adjusted R^2 | AIC |
|---|---|---|---|---|---|
| Averaged PERMA | 0.72 | 40.66 | <.0001*** | 0.5775 | 6,080.90 |
| Weighted Average PERMA | 0.58 | 37.89 | <.0001*** | 0.5426 | 6,176.70 |

However, there are many research questions that stand to benefit from collecting data on how people prioritize dimensions of well-being and how those strategies evolve over the lifespan. If the intended goal of an investigation is to predict something other than overall well-being, it may still be beneficial to account for importance ratings. For example, for consumer researchers, predicting the overall well-being of consumers is an unlikely goal. Identifying the age at which consumers place the highest importance on positive emotions, or identifying what a typical 25 year old thinks is most important for their well-being are more likely research questions that each require researchers to measure the importance of multiple dimensions of well-being (the results of this study suggest that people put the most importance on positive emotions at age 80 and that a typical 25 year old would rank the PERMA dimensions in order of importance in the following order: achievement, meaning, positive emotions, relationships and finally engagement; see tables 4A and 4B).

**Table 4A. Model Estimates For All Measures By Age, With Heat Map Assessing Within Measure Variance**

| | | Satisfaction | | | | | Importance | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | Overall Well-Being | Positive Emotions | Engagement | Relationships | Meaning | Achievement | Positive Emotions | Engagement | Relationships | Meaning | Achievement |
| 20 | 69.19 | 69.03 | 65.92 | 66.67 | 67.45 | 70.82 | 79.30 | 75.36 | 75.20 | 80.82 | 80.47 |
| 25 | 72.14 | 70.38 | 66.75 | 69.38 | 70.78 | 70.38 | 80.42 | 75.83 | 78.22 | 81.07 | 81.28 |
| 30 | 74.19 | 71.40 | 67.69 | 71.33 | 72.76 | 70.25 | 81.40 | 76.48 | 80.51 | 81.40 | 81.77 |
| 35 | 75.15 | 71.92 | 68.44 | 72.49 | 73.75 | 70.21 | 81.99 | 77.01 | 81.73 | 81.65 | 81.89 |
| 40 | 75.53 | 72.37 | 69.42 | 73.32 | 74.34 | 70.34 | 82.63 | 77.74 | 82.55 | 81.97 | 81.71 |
| 45 | 75.26 | 72.68 | 70.27 | 73.26 | 74.25 | 70.48 | 82.97 | 78.20 | 82.54 | 82.01 | 81.08 |
| 50 | 74.19 | 72.11 | 70.32 | 70.82 | 72.60 | 69.04 | 81.58 | 76.90 | 80.77 | 80.58 | 79.45 |
| 55 | 74.33 | 72.50 | 70.71 | 70.81 | 72.38 | 69.30 | 81.20 | 76.41 | 80.07 | 80.11 | 78.61 |
| 60 | 75.12 | 73.38 | 71.39 | 72.11 | 73.00 | 70.57 | 81.31 | 76.32 | 79.98 | 80.14 | 78.33 |
| 65 | 76.63 | 75.28 | 72.33 | 74.90 | 74.89 | 73.29 | 82.12 | 76.87 | 80.87 | 80.89 | 79.13 |
| 70 | 78.45 | 77.70 | 73.65 | 78.49 | 77.65 | 76.81 | 83.47 | 77.89 | 82.57 | 82.19 | 80.91 |
| 75 | 79.68 | 79.21 | 73.99 | 81.22 | 79.74 | 79.50 | 84.11 | 75.09 | 83.62 | 82.85 | 82.21 |
| 80 | 80.47 | 79.99 | 73.53 | 83.25 | 81.24 | 81.50 | 84.17 | 78.01 | 84.16 | 82.96 | 83.13 |
| 85 | 80.89 | 80.16 | 72.38 | 84.75 | 82.31 | 83.00 | 83.74 | 77.38 | 84.32 | 82.65 | 83.80 |
| 90 | 81.04 | 79.95 | 71.02 | 85.91 | 82.96 | 83.93 | 83.14 | 76.63 | 84.25 | 82.16 | 84.34 |
| 95 | 81.04 | 79.37 | 68.86 | 86.70 | 83.65 | 84.92 | 82.15 | 75.47 | 84.04 | 81.37 | 84.77 |
| 100 | 80.94 | 78.56 | 66.27 | 87.66 | 84.34 | 85.86 | 81.02 | 74.14 | 83.80 | 80.46 | 85.41 |

Model estimates for all well-being measures with heat map assessing within measure variance across ages.
Most suited for assessing how a given measure evolves over the lifespan

**Table 4B. Model Estimates For All Measures By Age, With Heat Map Assessing Within Age Variance**

| | | Satisfaction | | | | | Importance | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | Overall Well-Being | Positive Emotions | Engagement | Relationships | Meaning | Achievement | Positive Emotions | Engagement | Relationships | Meaning | Achievement |
| 20 | 69.19 | 69.03 | 65.92 | 66.67 | 67.45 | 70.82 | 79.30 | 75.36 | 75.20 | 80.82 | 80.47 |
| 25 | 72.14 | 70.38 | 66.75 | 69.38 | 70.78 | 70.38 | 80.42 | 75.83 | 78.22 | 81.07 | 81.28 |
| 30 | 74.19 | 71.40 | 67.69 | 71.33 | 72.76 | 70.25 | 81.40 | 76.48 | 80.51 | 81.40 | 81.77 |
| 35 | 75.15 | 71.92 | 68.44 | 72.49 | 73.75 | 70.21 | 81.99 | 77.01 | 81.73 | 81.65 | 81.89 |
| 40 | 75.53 | 72.37 | 69.42 | 73.32 | 74.34 | 70.34 | 82.63 | 77.74 | 82.55 | 81.97 | 81.71 |
| 45 | 75.26 | 72.68 | 70.27 | 73.26 | 74.25 | 70.48 | 82.97 | 78.20 | 82.54 | 82.01 | 81.08 |
| 50 | 74.19 | 72.11 | 70.32 | 70.82 | 72.60 | 69.04 | 81.58 | 76.90 | 80.77 | 80.58 | 79.45 |
| 55 | 74.33 | 72.50 | 70.71 | 70.81 | 72.38 | 69.30 | 81.20 | 76.41 | 80.07 | 80.11 | 78.61 |
| 60 | 75.12 | 73.38 | 71.39 | 72.11 | 73.00 | 70.57 | 81.31 | 76.32 | 79.98 | 80.14 | 78.33 |
| 65 | 76.63 | 75.28 | 72.33 | 74.90 | 74.89 | 73.29 | 82.12 | 76.87 | 80.87 | 80.89 | 79.13 |
| 70 | 78.45 | 77.70 | 73.65 | 78.49 | 77.65 | 76.81 | 83.47 | 77.89 | 82.57 | 82.19 | 80.91 |
| 75 | 79.68 | 79.21 | 73.99 | 81.22 | 79.74 | 79.50 | 84.11 | 75.09 | 83.62 | 82.85 | 82.21 |
| 80 | 80.47 | 79.99 | 73.53 | 83.25 | 81.24 | 81.50 | 84.17 | 78.01 | 84.16 | 82.96 | 83.13 |
| 85 | 80.89 | 80.16 | 72.38 | 84.75 | 82.31 | 83.00 | 83.74 | 77.38 | 84.32 | 82.65 | 83.80 |
| 90 | 81.04 | 79.95 | 71.02 | 85.91 | 82.96 | 83.93 | 83.14 | 76.63 | 84.25 | 82.16 | 84.34 |
| 95 | 81.04 | 79.37 | 68.86 | 86.70 | 83.65 | 84.92 | 82.15 | 75.47 | 84.04 | 81.37 | 84.77 |
| 100 | 80.94 | 78.56 | 66.27 | 87.66 | 84.34 | 85.86 | 81.02 | 74.14 | 83.80 | 80.46 | 85.41 |

Model estimates for all well-being measures with heat map assessing within age variance across satisfaction and importance measures.
Most suited for assessing the satisfaction of a typical person of each age and the priorities of a person of each age.

Incorporating dimensional importance measures can inform research questions outside of consumer research as well. Consider oft-discussed quarter- and mid-life crises. Since the term "mid-life crisis" was first introduced (Jaques 1965), the idea that there is an inevitable downturn in well-being at midlife (later extended to recognize a similar downturn at quarter life) has gained broad public acceptance (Brandes 1985). Despite this acceptance, evidence to support the

idea is scant and contradictory (Brim 1992; Clausen 1995; Cherlin 1992; Chiriboga 1997; Costa and McCrae1990; Thurnher 1983). Researchers examining this questions have noted that the range of definitions of what constitutes a midlife crises, ranges of ages researchers consider midlife, and variety of methods employed contribute to the lack of consensus on this issue (Wethington 2000). However, examining the more nuanced data collected in this study reveals one possible mechanism underlying the midlife crises that would allow for such a crises to occur without causing huge swings in overall well-being; it appears as though the periods of life during which priorities and satisfaction with individual dimensions of well-being shift roughly occur at quarter and midlife. Such shifts need not lead to dramatic changes in overall well-being. Instead, while the transition may be stressful, declining importance or satisfaction on one dimension can be offset by increasing importance or satisfaction on another dimension (see tables 4A and 4B). The data from this study suggest that importance of dimensions changes over the lifespan and that placing greater importance on a dimension is correlated with greater satisfaction on that dimension (see table 5). This correlational pattern also provides support for the validity of the dimensional measures; the higher correlation between corresponding importance and satisfaction dimensional measures suggests that the measures are not simply noisy overall life satisfaction judgments.

**Table 5. Correlations of All Measures**

| | | | Satisfaction | | | | | Importance | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Overall Well-Being | Positive Emotions | Engagement | Relationships | Meaning | Achievement | Positive Emotions | Engagement | Relationships | Meaning | Achievement |
| | Overall Well-Being | *** | .731 | .608 | .585 | .677 | .639 | .501 | .509 | .462 | .499 | .462 |
| Satisfaction | Positive Emotions | | *** | .673 | .617 | .699 | .656 | **.607** | .492 | .478 | .489 | .461 |
| | Engagement | | | *** | .602 | .635 | .607 | .505 | **.633** | .458 | .480 | .466 |
| | Relationships | | | | *** | .672 | .630 | .507 | .497 | **.647** | .487 | .441 |
| | Meaning | | | | | *** | .740 | .508 | .515 | .512 | **.608** | .497 |
| | Achievement | | | | | | *** | .437 | .467 | .446 | .479 | **.552** |
| Importance | Positive Emotions | | | | | | | *** | .640 | .671 | .670 | .621 |
| | Engagement | | | | | | | | *** | .683 | .707 | .685 |
| | Relationships | | | | | | | | | *** | .704 | .641 |
| | Meaning | | | | | | | | | | *** | .772 |
| | Achievement | | | | | | | | | | | *** |

## 2.6 Limitation and Extensions

The key limitation of this study is that I conducted a single investigation into a number of questions and relied on between participant variation in age to draw conclusions. Indeed, a longer-term collection with within participants variation in age would be ideal. However, I am confident that this limitation can also serve as a strength. The richness and breadth of this initial study is intended to set the groundwork to validate the approach and serve as the basis for later more specific predictions and longer-term collections.

Another limitation of the study is that I do not ask individual respondents to expand on the reasoning behind their prioritization. Like researchers, people differ in terms of their theories about what causes happiness and well-being and how long the effects of an experience will last (Andrade 2005; Gilbert et al. 1998; Labroo and Mukhopadhyay 2009). These beliefs affect not only the actions people take to maintain or improve well-being, but the motivations underlying those actions (Labroo and Mukhopadhyay 2009; Tice, Bratslavsky, and Baumeister 2001). For example, individual's beliefs about the importance of specific memories and the difficulty of securing and maintaining accurate memories over time explain differences in behaviors related to memory protection (Zauberman, Ratner, and Kim 2009) and consumers believe that there are individual differences in the effect consuming experiential products has on well-being (Dai, Chan, and Mogilner 2015). Future work should probe the specific theories underlying different prioritization strategies that consumers use and endorse.

Another related limitation of the study is that because I do not have within-participant variation in age, I cannot examine delayed outcomes associated with various prioritization strategies. The results of this study clearly suggest that prioritizing some dimensions of well-being while discounting others correlates with lower overall well-being. However, this finding

only speaks to the time at which prioritization is high. It could be the case that prioritizing and accepting lower overall well-being at younger ages leads to greater overall well-being later in life. If this is the case, it could explain the quadratic effect of prioritization at younger ages; high prioritizers might have lower overall well-being but be more optimistic about their future well-being. Future inquiries using this approach should examine how broadening the temporal scope of the investigation affects results.

The questions and approach used in this study also have the potential to enrich the study of shorter-term effects on well-being. For example, experiences like traveling abroad, having children, or having a brush with death are often reported to change the way that people approach the world and thinking about what matters in life. The approach that I used here could be used to identify whether it is a change in satisfaction with the various dimensions of one's life or a change in the way one thinks about the importance of the various dimensions in life that underlies such shifts.

While the limitations of this work are clear, I believe that these initial findings are valuable and can inform future research. Allowing for a more complex model of well-being provided some clues as to why the literature examining the relationship between age and well-being has resulted in conflicting results. This work demonstrated that depending on the range of ages examined, the aspects of well-being measured, and the method of analysis employed, researchers could conclude that there are a number of different patterns by which well-being changes over the lifespan. More broadly, this work supports the idea that approaching the study of well-being by conceptualizing of it as a dynamic system can lead to new, rich insights about ourselves and others.

# Chapter 3. Essay 2: Hype narrowly benefits but broadly hurts consumers' well-being

## 3.1 Introducing Hype

Championships. Series finales. Award shows. Televised events that draw millions of viewers. Many viewers—even those without intrinsic interest—tune in because of the surrounding *hype*: intense, coordinated, multi-pronged, and exaggerated publicity efforts often driven by commercial interests. Indeed, millions of people who care little about boxing, period dramas, or filmmaking watched Mayweather fight Pacquiao, the Mad Men series finale, and the Academy Awards. In this essay, I examine how consumers' decisions to give in to the hype (or not) affect their well-being.

Hype clearly benefits media broadcasters, content creators, and advertisers. The ads, news stories, and social media chatter constituting hype can foster anticipated regret or a "fear of missing out" on a universally-admired event (Mellers and McGraw 2001). The promise of once-in-a-lifetime experiences helps networks, sponsors, and brands attract viewers who are particularly valuable because they pay close attention to the broadcast and are reluctant to change the channel (Teixeira et al. 2014). Hype helps broadcasters and advertisers cut through a crowded media landscape.

## 3.2 The Effect of Hype on Consumer Well-Being

Hype's benefits to viewers are less clear. On one hand, believing the hype may enhance social connections. Family, friends, and strangers will gather in person to view the event or engage with each other on social media (cf. Bhargave and Montgomery 2013). Even people viewing alone may benefit from partaking in a shared cultural experience and being able to join

in on water cooler conversations later (Boothby, Clark and Bargh 2014; Gigone and Hastie 1993; McRae et al. 2011).

On the other hand, believing the hype may prove costly for people's well-being. The excess, omnipresence, and exaggeration of hype can backfire by raising expectations that foster disappointment—an obvious consequence of over-promising and under-delivering (Anderson, 1973; Oliver, 1980; Mellers and McGraw 2001). For many people, giving into hype may cause them to deviate from normally preferred activities related to important values, priorities, and goals. As a result, giving in to hype carries opportunity costs (Frederick and Loewenstein 2009; Spiller 2011). For example, how many of the 112 million people who watched Super Bowl 50 actually hate football and would have been better off hiking, painting, or even folding laundry?

My inquiry investigates the unique psychological costs and benefits of people's pursuit of hyped events by drawing from a contemporary multi-dimensional perspective of well-being, namely Seligman's (2011) PERMA model. I examine how opting in or out of hyped events affects people's: 1) experience of *positive emotion*, 2) sense of deep *engagement*, 3) felt quality of social *relationships*, 4) sense of *meaning*, and 5) feelings of *achievement*.

In six studies of over 11,000 respondents and 22 hyped televised events I find that, relative to alternative activities, watching hyped events enhances well-being derived from social connectedness, an effect that emerges primarily when people watch alone. On PERMA's four remaining dimensions, however, people who watched hyped events reported being worse off compared to people who engaged in alternative activities.

### 3.3 Study 1

The first study was a long-term field survey conducted across 15 hyped events. The first event occurred in February of 2015 (Super Bowl XLIX) and the last event occurred in November

of 2015 (final game of the World Series). I recruited all participants (n= 6,406, $M_{Age}$ = 33.4, 60% male) on Amazon's Mechanical Turk (MTurk) via study postings that specifically recruited people who had watched the hyped event or done something fun and entertaining for themselves in the previous 24 hours. I posted studies immediately after each hyped event ended, and recruited approximately 400 participants per event. Studies were available until 400 participants completed the survey or 24 hours passed, whichever occurred first.

For the sake of clarity, I describe the study and results in 3 parts below. In Part 1, I describe the first section of the survey and discuss the main effect of engaging in hyped versus alternative activities on the measures of well-being. In Part 2, I consider social versus solitary pursuit of hype and detail the social components of my findings. In Part 3, I describe exploratory measures that I added over the course of the nearly ten-month data collection window and discuss what these additional measures tell us about the effect of engaging in hyped versus alternative activities.

### 3.3.1 Hype

#### *Basic Method and Measures*

After participants reviewed the informed consent document, I asked whether they had engaged in the hyped event. Participants who indicated they had not engaged in the hyped event were asked to indicate what they had done for fun and entertainment instead. All participants then responded to the well-being measures with the prompt "to what extent do the following statements describe your experience" either watching the hyped event (with the language changed to reflect each hyped event) or engaging in the alternative activity that he or she specified earlier (the text from each participant's earlier response was displayed again). Possible responses ranged from 0 ("Does not describe my experience at all") to 10 ("Describes my

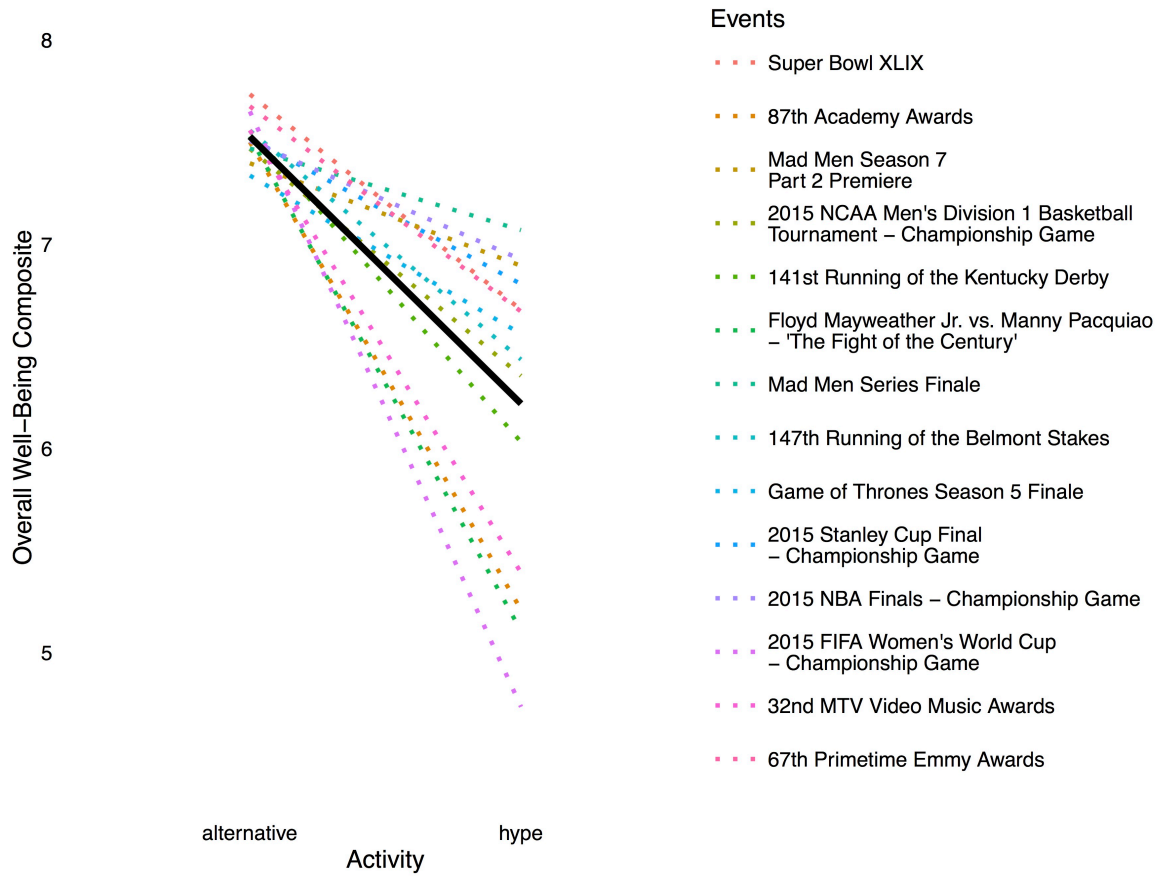
experience perfectly"). The five statements in this measure referred to the effect the experience had on each of the five dimensions of Seligman's (2011) PERMA model of well-being (positive emotions, engagement, relationships, meaning, and achievement; items reported in table 6).

***Analysis and Results***

To investigate how watching hyped events affected well-being relative to alternative activities, I conducted all analyses using a mixed effects linear model. I ran models predicting both an overall well-being composite measure of the averaged five individual well-being items ($\alpha = .84$) and each individual well-being item. All of the results I report for Study 1 are from analyses that controlled for age, education, gender, and race fixed effects and that allowed for random effects of both individual hyped events and of participants. I included fixed effects for the demographic characteristics in the model as past work has demonstrated that these factors can affect well-being (Kahneman et al. 1999). The conclusions I report, however, are unchanged for all analyses reported in Study 1 when demographic effects are not included in the model, or when I conduct simple regressions controlling for fixed effects of events and allowing only for random effects of participants.

Watching a hyped television event versus alternative activity had a significant negative effect on the composite measure and on each individual measure of well-being ($p$'s $<.001$, all statistics reported in table 6, see figure 7).

**Figure 7. Mixed Effects Model Results From Study 1, Part 1 Showing the Effect of Engaging in a Hyped or Alternative Activity on Participants' Overall Well-Being**




### 3.3.2 Social Versus Solitary Pursuits and Hype

The results of the analysis in Part 1 suggest that engaging in hyped events is worse for well-being than pursuing alternative activities. However, these results do not account for the unique social opportunities and benefits that many people receive from large communal experiences, such as engaging in hyped events. Thus, in Part 2 of the analyses, I examined the effect of pursuing hype socially versus solitarily.

#### *Basic Method and Measures*

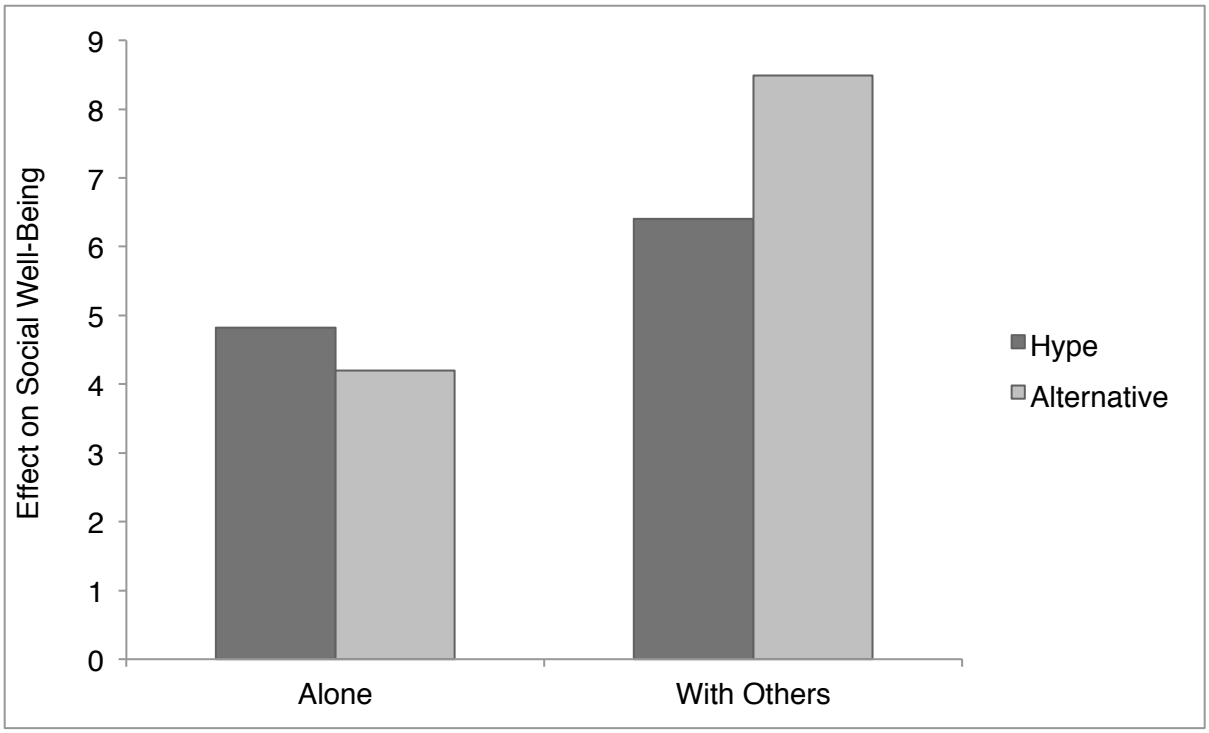
After participants responded to the well-being items described in Part 1, they indicated whether they engaged in the hyped event or some other activity either with others or alone.

***Analysis and Results***

The analyses were identical to the analyses in Part 1, except I included an interaction term between hype and the social nature of the activity in the model. In the model predicting the overall well-being composite measure, the hype effect, social effect, and the interaction term were all significant ($p$'s <.001, all statistics reported in table 6). Pursuing alternative activities was still better for overall well-being, but pursuing either activity with others was better than pursuing it alone. Furthermore, the difference between pursuing hype versus alternative activities was less evident when participants were alone than when they were with others. Importantly, while the results of this analysis suggest that pursuing an alternative activity alone still results in more positive effects on well-being than engaging in a hyped activity with others, the penalty of pursuing the hype is diminished when the hyped activity is social and the alternative is not.

When I ran the same model predicting PERMA's five dimensions of well-being, the pattern was no longer consistent (full results of all analyses are reported in table 6). While the models predicting the positive emotion and meaning measures showed similar results to the composite, the models predicting the achievement and engagement measures found that the main effect of hype remained significant and negative and the main effect of being with others was significant and positive. The interaction was not significant for either achievement or engagement. The results of the model predicting the measure of social well-being showed a unique pattern; the interaction and the main effects were all significant, but pursuing hype seemed to pay off for the first time. Among participants who engaged in an activity alone, those who engaged in a hyped activity reported the experience enhanced their relationships significantly more than participants who engaged in alternative activities. This analysis suggests that watching hyped events confers social benefits, even if no one else is physically present.

**Figure 8. Mixed Effects Model Results From Study 1, Part 2 Showing the Sole Instance in Which Hyped Events Benefited Well-Being Relative to Alternative Activities: The Effect on Social Well-Being When Participants Were Solitary**




### 3.3.3 Fans and Winners

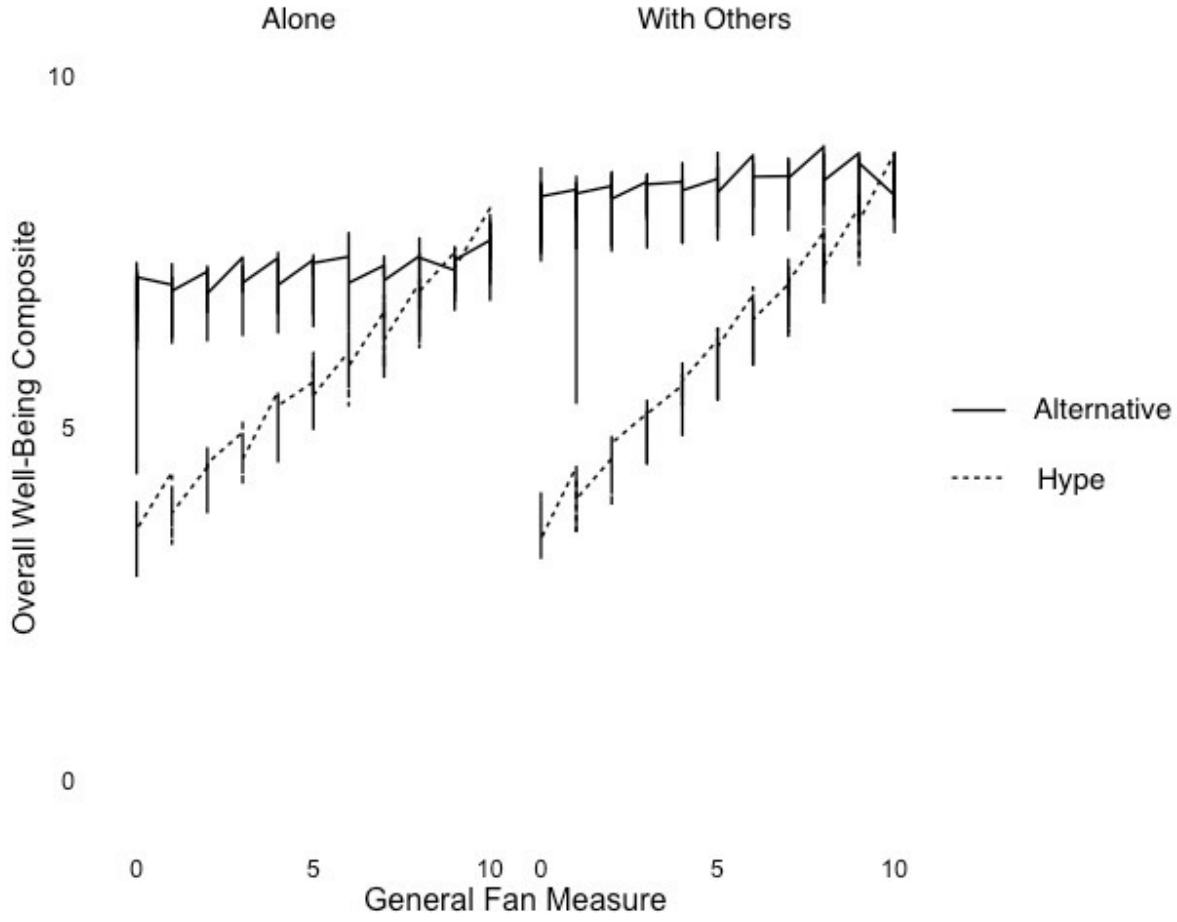
My findings thus far suggest that believing the hype largely hinders well-being when compared to engaging in alternative activities. However, given the extreme popularity and persistence of hyped events, it is reasonable to suspect that hype must pay off for people with specific characteristics. To ensure that I was not overlooking the effect of specific individual goals, values, or interests, I added various items over the course of the data collection period to assess whether hype does indeed pay off for a subset of people relative to engaging in alternative activities. I briefly summarize these measures and results below.

#### *General Fans*

For 13 of the hyped events, I included a measure of the extent to which participants (*N*=5,573) were fans of the general hyped event, ranging from 0 (Not at all a fan) to 10

(Definitely a fan). For example, for the Kentucky Derby, the item read "To what extent would you describe yourself as a fan of horse racing?" When I added this term to the models described in Part 2 (as a three-way interaction between hype, social, and the extent to which participants indicated they were a fan), the three-way interaction predicting the overall well-being composite failed to reach statistical significance ($p$=.09, additional details of this analysis and the analyses for each well-being measure appear in table 6). While the significance of the three-way interaction varied across the individual well-being items ($p$'s range from .73 to .06), the interpretation was largely consistent; even among the most avowed fans, pursuing the hype was never superior to pursuing alternative activities. Among the most fanatic viewers, the best hype could do was to match alternatives activities for any given measure of well-being. The sole exception was among people who 1) were alone and 2) indicated at least moderate appreciation for the general hyped activity (responded with a 7 or higher on the general fan scale); as in the analyses in Part 2, among these participants hyped events outperformed alternative activities with regard to social benefits.

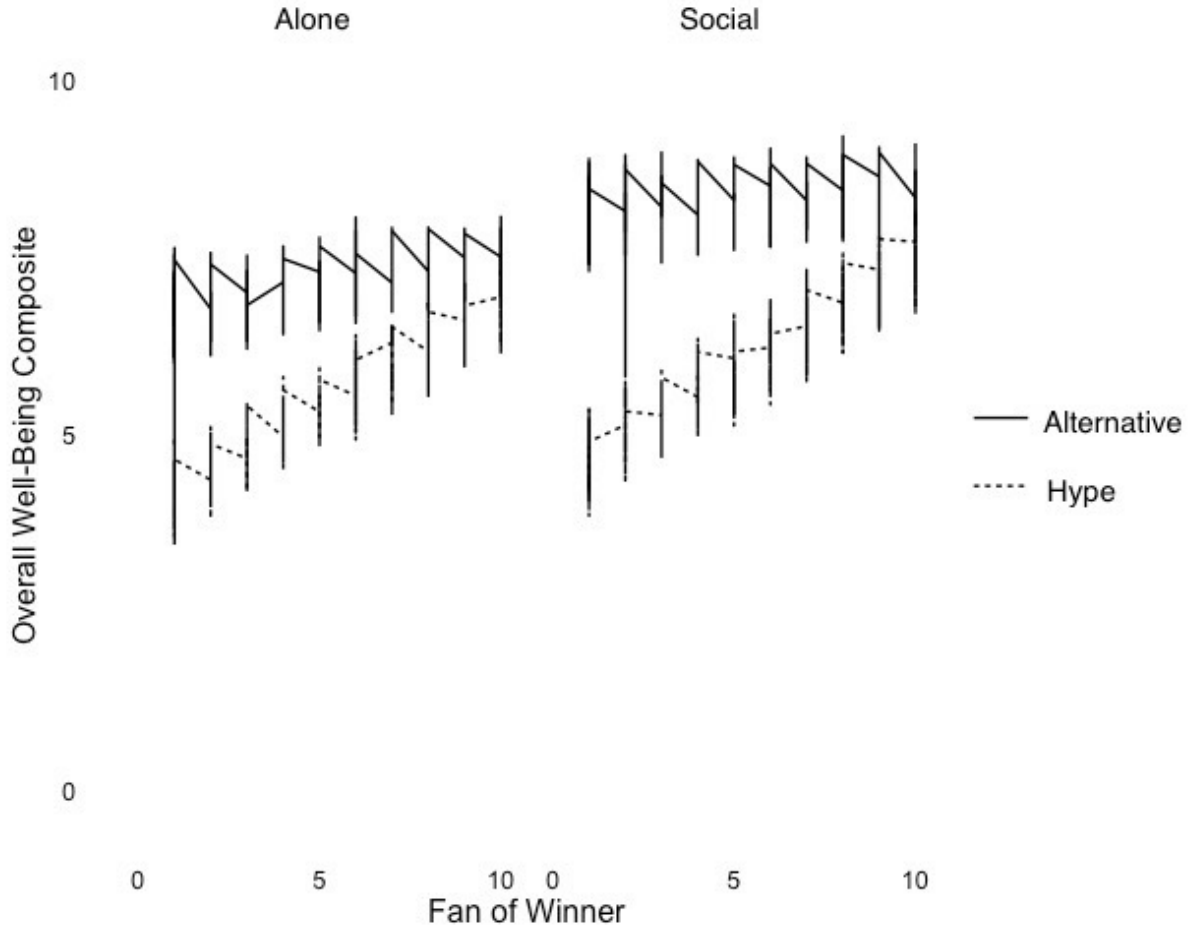
**Figure 9. Mixed Effects Model Results From Study 1, Part 3 Showing Moderation of the Effect Engaging in a Hyped or Alternative Activity Had on Participants' Overall Well-Being by the Extent to Which Participants Reported Being Fans of the Hyped Activity**




***Fans of Winners***

For some of the hyped events, there were clear winners and losers. For 12 of these events, I included a measure of the extent to which participants (*N*=5,174) were fans of the winner (e.g., "To what extent would you describe yourself as a fan of the Golden State Warriors?"). The measure again ranged from 0 (Not at all a fan) to 10 (Definitely a fan). When I added this term to the models described in Part 2 (as a three-way interaction between hype, social, and the extent to which participants indicated they were a fan of the winner), the three-way interaction predicting

**Figure 10. Mixed Effects Model Results From Study 1, Part 3 Showing Moderation of the Effect Engaging in a Hyped or Alternative Activity Had on Participants' Overall Well-Being by the Extent to Which Participants Reported Being Fans of the Winner of a Hyped Event**



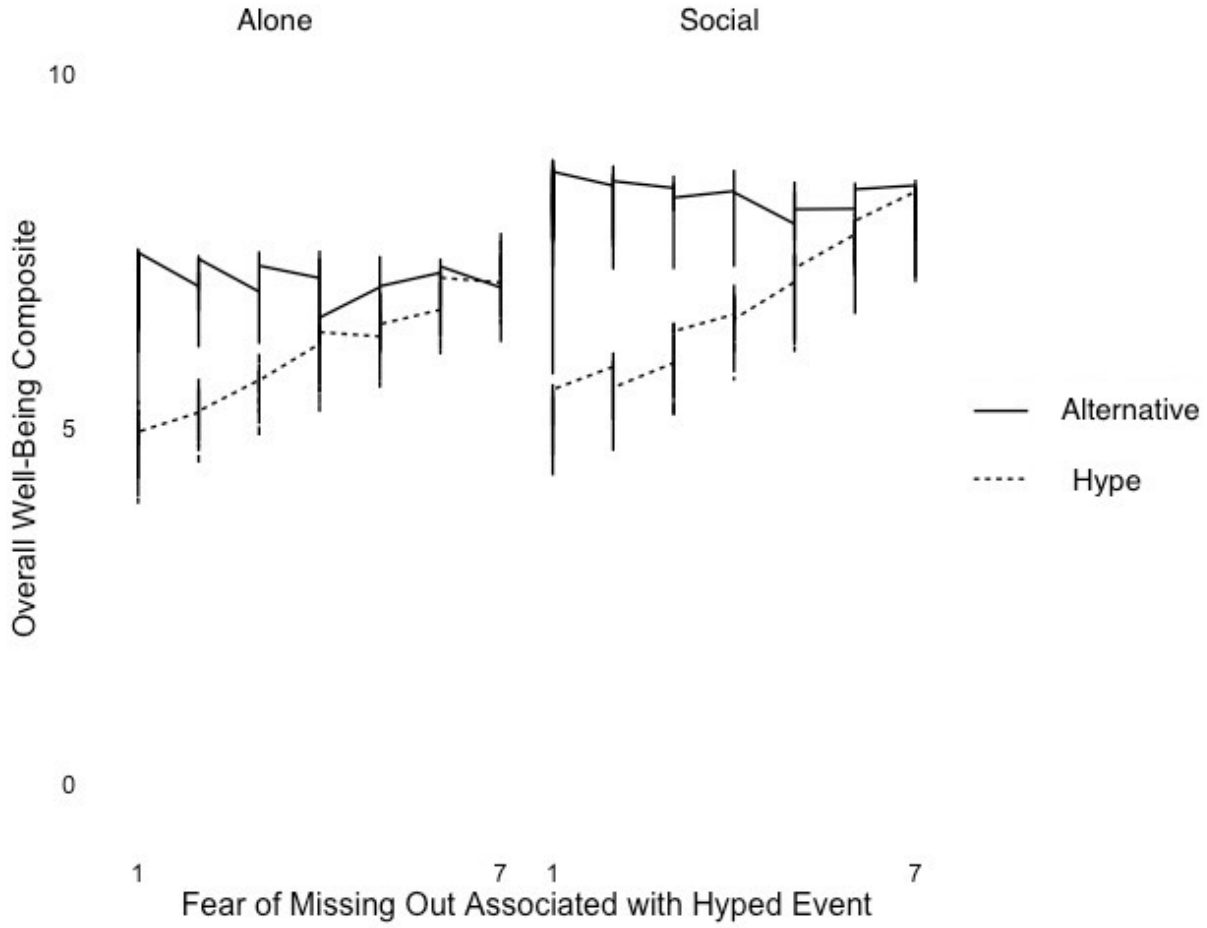

the overall well-being composite failed to reach significance (p =.10, additional details of this analysis and the analyses for each well-being measure appear in table 6). While the significance of the three-way interaction varied across the individual well-being items (p's range from .86 to .03), the interpretation was again quite consistent: even among most avowed fans of the winners, pursuing the hype was never superior to pursuing alternative activities. Again, the best hype could do was to match alternative activities for any given

measure of well-being. The sole exception was among those who 1) were alone and 2) indicated they were extreme fans of the winners (i.e. those who responded with a 10 on the fan of the winner scale); among these participants hyped events again outperformed alternative activities with regard to social benefits.

***Fear of Missing Out***

For 11 of the hyped events, I asked participants (*N*=4,836) to indicate the extent to which they worried that they might miss out on something if they didn't watch the hyped event (e.g. "To what extent did you worry that you might miss out on something if you didn't watch the Belmont Stakes this afternoon?"). The measure ranged from 1 ("I didn't worry about missing out at all") to 7 ("I was extremely worried about missing out"). When I added this term to the models described in Part 2 (as a three-way interaction between hype, social, and fear of missing out), the three-way interaction predicting the overall well-being composite failed to reach significance ($p$ =.19, additional details of this analysis and the analyses for each well-being measure appear in table 6). While the significance of the three-way interaction varied across the individual well-being items ($p$'s range from .96 to .02), the interpretation was again quite consistent: even among participants who expressed the greatest fear of missing out, pursuing the hype was never superior to pursuing alternative activities. Again, the best hype could do was to match alternative activities for any given measure of well-being. The sole exception was among those who 1) were alone and 2) indicated experiencing moderate fear of missing out (i.e. those who responded with a 4 or higher on the fear of missing out measure); among these participants hyped events again outperformed alternative activities with regard to social benefits.

**Figure 11. Mixed Effects Model Results From Study 1, Part 3 Showing Moderation of the Effect Engaging in a Hyped or Alternative Activity Had on Participants' Overall Well-Being by the Extent to Which Participants Reported Experiencing a "Fear of Missing Out" Associated with the Hyped Event**



## Table 6. Full Results of Study 1

| | | Part 1 | | | Part 2 | | | Part 3 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *Hype* | | | *Hype*Social* | | | *Hype*Social*General Fan* | | | | *Hype*Social*Fan of Winner* | | | | *Hype*Social*Fear of Missing Out (FOMO)* | | | | | |
| | Effect | estimate | *t* | *p* | estimate | *t* | *p* | Effect | estimate | *t* | *p* | Effect | estimate | *t* | *p* | Effect | estimate | *t* | *p* | | |
| **Well-Being Composite** | Hype | -1.35 | -23.02 | <.001* | -0.94 | -11.00 | <.001* | Hype | -3.29 | -17.63 | <.001* | Hype | -2.60 | -17.73 | <.001* | Hype | -2.47 | -12.69 | <.001* | | |
| | Social | | | | 1.24 | 17.45 | <.001* | Social | 1.25 | 11.08 | <.001* | Social | 1.32 | 14.09 | <.001* | Social | 1.23 | 9.81 | <.001* | | |
| | Hype*Social | | | | -0.75 | -6.62 | <.001* | General Fan | 0.06 | 3.20 | .001* | Fan of Winner | 0.10 | 4.69 | <.001* | FOMO | 0.01 | 0.15 | .92 | | |
| | | | | | | | | Hype*Social | -1.16 | -4.84 | <.001* | Hype*Social | -0.86 | -4.59 | <.001* | Hype*Social | -1.07 | -4.22 | <.001* | | |
| | | | | | | | | General Fan*Hype | 0.35 | 11.61 | <.001* | Fan of Winner*Hype | 0.20 | 6.97 | <.001* | FOMO*Hype | 0.38 | 6.24 | <.001* | | |
| | | | | | | | | General Fan*Social | 0.01 | 0.13 | .90 | Fan of Winner*Social | -0.05 | -1.87 | .06 | FOMO*Social | -0.04 | -0.53 | .62 | | |
| | | | | | | | | General Fan*Hype*Social | 0.06 | 1.67 | .09 | Fan of Winner*Hype*Social | 0.06 | 1.67 | .10 | FOMO*Hype*Social | 0.11 | 1.34 | .19 | | |
| **Positive Emotions** | Hype | -1.38 | -23.19 | <.001* | -1.17 | -13.24 | <.001* | Hype | -3.61 | -18.43 | <.001* | Hype | -2.93 | -19.29 | <.001* | Hype | -2.60 | -12.76 | <.001* | | |
| "*Watching the _____/Alternative activity* | Social | | | | 0.68 | 9.20 | <.001* | Social | 0.70 | 7.00 | <.001* | Social | 0.68 | 7.00 | <.001* | Social | 0.60 | 4.42 | <.001* | | |
| brought me a great deal of pleasure." | Hype*Social | | | | -0.39 | -3.28 | .001* | General Fan | 0.03 | 1.79 | .07 | Fan of Winner | 0.04 | 1.72 | .08 | FOMO | -0.18 | -3.57 | <.001* | | |
| | | | | | | | | Hype*Social | -0.62 | 0.25 | .01 | Hype*Social | -0.43 | -2.22 | .03 | Hype*Social | -0.37 | -1.39 | .16 | | |
| | | | | | | | | General Fan*Hype | 0.37 | 11.87 | <.001* | Fan of Winner*Hype | 0.28 | 9.17 | <.001* | FOMO*Hype | 0.46 | 7.14 | <.001* | | |
| | | | | | | | | General Fan*Social | -0.01 | -0.34 | .74 | Fan of Winner*Social | 0.00 | 0.17 | .87 | FOMO*Social | 0.05 | 0.74 | .45 | | |
| | | | | | | | | General Fan*Hype*Social | 0.04 | 1.00 | .32 | Fan of Winner*Hype*Social | 0.01 | 0.18 | .86 | FOMO*Hype*Social | -0.02 | 0.22 | .82 | | |
| **Engagement** | Hype | -1.59 | -20.01 | <.001* | -1.73 | -14.61 | <.001* | Hype | -4.69 | -17.81 | <.001* | Hype | -3.50 | -16.77 | <.001* | Hype | -3.80 | -14.12 | <.001* | | |
| "I lost myself in *Watching* | Social | | | | -0.22 | -2.22 | .03 | Social | -0.17 | -1.25 | .21 | Social | -0.20 | -1.48 | .14 | Social | -0.29 | -1.62 | .10 | | |
| *the ____/Alternative activity*." | Hype*Social | | | | 0.26 | 1.68 | .09 | General Fan | 0.01 | 0.25 | .81 | Fan of Winner | 0.05 | 1.58 | .11 | FOMO | -0.06 | -0.93 | .32 | | |
| | | | | | | | | Hype*Social | -0.27 | -0.81 | .42 | Hype*Social | 0.16 | 0.61 | .54 | Hype*Social | 0.09 | 0.24 | .80 | | |
| | | | | | | | | General Fan*Hype | 0.49 | 11.44 | <.001* | Fan of Winner*Hype | 0.22 | 5.28 | <.001* | FOMO*Hype | 0.57 | 6.74 | <.001* | | |
| | | | | | | | | General Fan*Social | 0.00 | -0.01 | .99 | Fan of Winner*Social | -0.06 | -1.53 | .13 | FOMO*Social | 0.01 | 0.11 | .87 | | |
| | | | | | | | | General Fan*Hype*Social | 0.08 | 1.40 | .16 | Fan of Winner*Hype*Social | 0.09 | 1.62 | .10 | FOMO*Hype*Social | 0.05 | 0.43 | .69 | | |
| **Relationships** | Hype | -0.87 | -9.77 | <.001* | 0.60 | 5.16 | <.001* | Hype | -1.07 | -4.03 | <.001* | Hype | -0.69 | -3.40 | <.001* | Hype | -0.33 | -1.23 | .20 | | |
| "*Watching the ____/Alternative activity* | Social | | | | 4.31 | 44.53 | <.001* | Social | 4.29 | 31.72 | <.001* | Social | 4.55 | 34.18 | <.001* | Social | 4.47 | 24.88 | <.001* | | |
| enhanced my relationships with others." | Hype*Social | | | | -2.71 | -17.63 | <.001* | General Fan | 0.09 | 3.56 | <.001* | Fan of Winner | 0.14 | 5.10 | <.001* | FOMO | 0.21 | 3.26 | .001* | | |
| | | | | | | | | Hype*Social | -3.05 | -8.99 | <.001* | Hype*Social | -2.74 | -10.49 | <.001* | Hype*Social | -3.23 | -9.25 | <.001* | | |
| | | | | | | | | General Fan*Hype | 0.21 | 4.99 | <.001* | Fan of Winner*Hype | 0.13 | 3.19 | .001* | FOMO*Hype | 0.08 | 1.00 | .29 | | |
| | | | | | | | | General Fan*Social | -0.01 | -0.24 | .81 | Fan of Winner*Social | -0.07 | -2.03 | .04 | FOMO*Social | -0.15 | -1.68 | .10 | | |
| | | | | | | | | General Fan*Hype*Social | 0.08 | 1.45 | .15 | Fan of Winner*Hype*Social | 0.05 | 1.05 | .29 | FOMO*Hype*Social | 0.24 | 2.08 | .04 | | |
| **Meaning** | Hype | -0.98 | -13.55 | <.001* | -0.59 | -5.55 | <.001* | Hype | -3.25 | -13.75 | <.001* | Hype | -2.30 | -12.40 | <.001* | Hype | -2.42 | -9.99 | <.001* | | |
| "*Watching the ____/Alternative activity* | Social | | | | 0.98 | 10.98 | <.001* | Social | 0.90 | 7.43 | <.001* | Social | 1.03 | 8.69 | <.001* | Social | 0.92 | 5.66 | <.001* | | |
| was a meaningful experience." | Hype*Social | | | | -0.70 | -4.95 | <.001* | General Fan | 0.06 | 2.86 | .004* | Fan of Winner | 0.11 | 4.23 | <.001* | FOMO | -0.06 | -0.94 | .34 | | |
| | | | | | | | | Hype*Social | -0.89 | -2.95 | .003* | Hype*Social | -0.79 | -3.30 | .001* | Hype*Social | -0.78 | -2.46 | .01 | | |
| | | | | | | | | General Fan*Hype | 0.40 | 10.49 | <.001* | Fan of Winner*Hype | 0.21 | 5.63 | <.001* | FOMO*Hype | 0.50 | 6.51 | <.001* | | |
| | | | | | | | | General Fan*Social | 0.02 | 0.79 | .43 | Fan of Winner*Social | -0.03 | -0.94 | .35 | FOMO*Social | 0.03 | 0.41 | .68 | | |
| | | | | | | | | General Fan*Hype*Social | 0.02 | 0.34 | .73 | Fan of Winner*Hype*Social | 0.05 | 0.99 | .32 | FOMO*Hype*Social | 0.01 | 0.06 | .96 | | |
| **Achievement** | Hype | -1.94 | -23.74 | <.001* | -1.81 | -14.86 | <.001* | Hype | -3.84 | -13.96 | <.001* | Hype | -3.55 | -16.91 | <.001* | Hype | -3.21 | -11.63 | <.001* | | |
| "I felt like I'd achieved something after | Social | | | | 0.49 | 4.83 | <.001* | Social | 0.50 | 3.54 | <.001* | Social | 0.64 | 4.78 | <.001* | Social | 0.71 | 3.82 | <.001* | | |
| *Watching the ____/Alternative activity*." | Hype*Social | | | | -0.23 | -1.44 | .15 | General Fan | 0.09 | 3.30 | .001* | Fan of Winner | 0.14 | 4.66 | <.001* | FOMO | 0.11 | 1.63 | .11 | | |
| | | | | | | | | Hype*Social | -1.94 | -2.65 | .01 | Hype*Social | -0.51 | -1.90 | .06 | Hype*Social | -1.06 | -2.92 | .004* | | |
| | | | | | | | | General Fan*Hype | 0.28 | 6.32 | <.001* | Fan of Winner*Hype | 0.19 | 4.47 | <.001* | FOMO*Hype | 0.31 | 3.58 | <.001* | | |
| | | | | | | | | General Fan*Social | 0.01 | 0.26 | .80 | Fan of Winner*Social | -0.09 | -2.33 | .02 | FOMO*Social | -0.11 | -1.20 | .24 | | |
| | | | | | | | | General Fan*Hype*Social | 0.11 | 1.86 | .06 | Fan of Winner*Hype*Social | 0.12 | 2.18 | .03 | FOMO*Hype*Social | 0.28 | 2.32 | .02 | | |

*p* values are indicated as significant using a Bonferroni adjusted $\alpha = .008$

Hype coded as 0=alternative activity, 1=hyped event

Social coded as 0=alone, 1=with others

General Fan coded from 0=0 on a 0-10 scale, Fan of Winner coded with 0=0 on a 0-10 scale, FOMO coded with 0=1 on a 1-7 scale

N for the Hype*Social*General Fan analyses = 5,573

N for the Hype*Social*Fan of Winner analyses = 5,174

### 3.3.5 Discussion

In Study 1, I found evidence suggesting that giving in to hype has fewer positive effects on well-being compared to pursuing alternative activities. I found this effect persisted when hyped activities were social and alternative activities were not, among general fans, and among fans of winners. The one exception to this pattern of results appeared when I considered only the effect on social well-being among solitary respondents.

The data are consistent with a view that when people are alone, hyped events offer a shared (meta-communal) experience that bolsters their sense of social well-being. The mere idea that millions, or even hundreds of millions, of others are engaged simultaneously in the same activity might provide people with a sense of shared experience. Such profound shared cultural experiences might have a stronger effect on social well-being relative to activities without this internal narrative.

However, there were several potential problems with the data collection. First, I recruited subjects by calling attention to whether they had done the hyped activity or done something else "fun and entertaining" with their time. This method of recruitment could have biased my results and caused people who engaged in alternative activities to give higher ratings on pleasure and engagement when what I meant to select for was people who were able to spend their time as they wished. Second, I did not randomly assign people to watch versus not engage in hyped events and so the samples might differ in ways other than simply watching or not engaging in hyped events, despite my efforts to probe those differences by examining the effect of being fans, winning, or experiencing fear of missing out. I seek to address these concerns in the next three studies.

## 3.4 Study 2

Study 2 was intended to address concerns related to the recruiting language used in Study 1. Collections and analyses were identical to Study 1 with field surveys conducted across 4 hyped events in early 2017; the first event occurred in January 2017 (Golden Globes) and the last event occurred in February 2017 (Grammy's). I recruited all participants (n= 1,602 responses, 1,251 unique, $M_{Age}$ = 36.7, 57% male) on Amazon's Mechanical Turk (MTurk) via study postings that specifically recruited people who had watched the hyped event or done something other than watching the hyped event. The latter recruitment message was in contrast to the language in Study 1 which recruited people who had done some "fun and entertaining" instead of watching the hyped event. The concern was that using the "fun and entertaining language" might have affected results. I posted studies immediately after each hyped event ended, and recruited approximately 400 participants per event. Studies were available until 400 participants completed the survey or 24 hours passed, whichever occurred first.

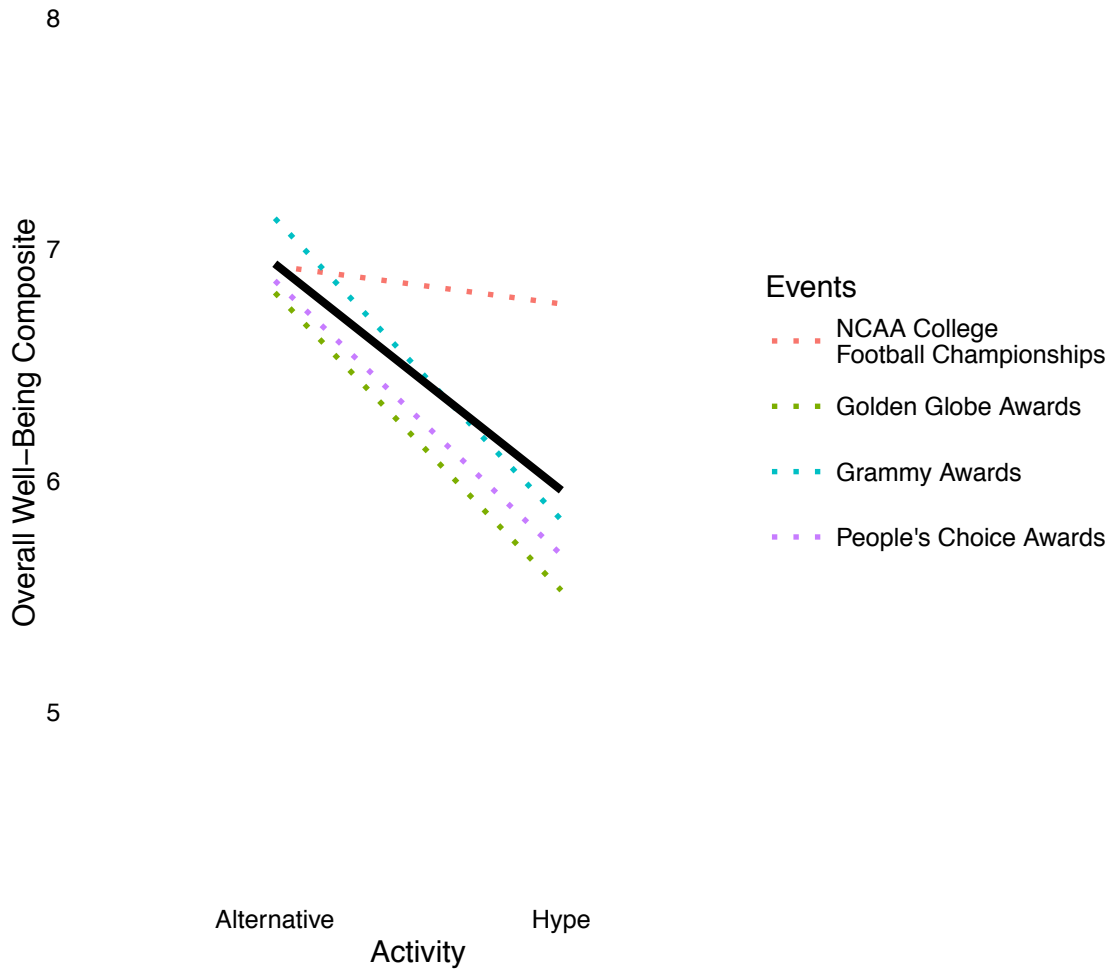
For the sake of clarity and consistency, I again describe the study and results in 3 parts below. In Part 1, I describe the first section of the survey and discuss the main effect of engaging in hyped versus alternative activities on the measures of well-being. In Part 2, I consider social versus solitary pursuit of hype and detail the social components of my findings. In Part 3, I describe an exploratory measure designed to assess whether people who engaged in the hype reported higher opportunity costs of their activities compared to people who did not engage with the hype.

### 3.4.1 Hype

The method, measures, and analyses in this study were identical to those used in Study 1, with the only exception being an additional measure detailed in section 3.4.3 below. Consistent

with the results of Study 1, watching a hyped television event versus engaging in an alternative activity had a significant negative effect on the composite measure of well-being ($\alpha = .83$) and on 4 of the 5 individual measures of well-being ($p$'s <.001, all statistics reported in table 7, see figure 12). In contrast to Study 1, in this study the effect of engaging in a hyped event had a non-significant but negative-trending effect on social well-being.

**Figure 12. Mixed Effects Model Results From Study 2 Showing the Effect of Engaging in a Hyped or Alternative Activity on Participants' Overall Well-Being**




### 3.4.2 Social Versus Solitary Pursuits and Hype

The results of the analysis in Part 1 suggest that engaging in hyped events is worse for well-being than pursuing alternative activities. However, these results do not account for the

unique social opportunities and benefits that many people receive from large communal experiences, such as engaging in hyped events. Thus, in Part 2 of the analyses, I again examined the effect of pursuing hype socially versus solitarily.

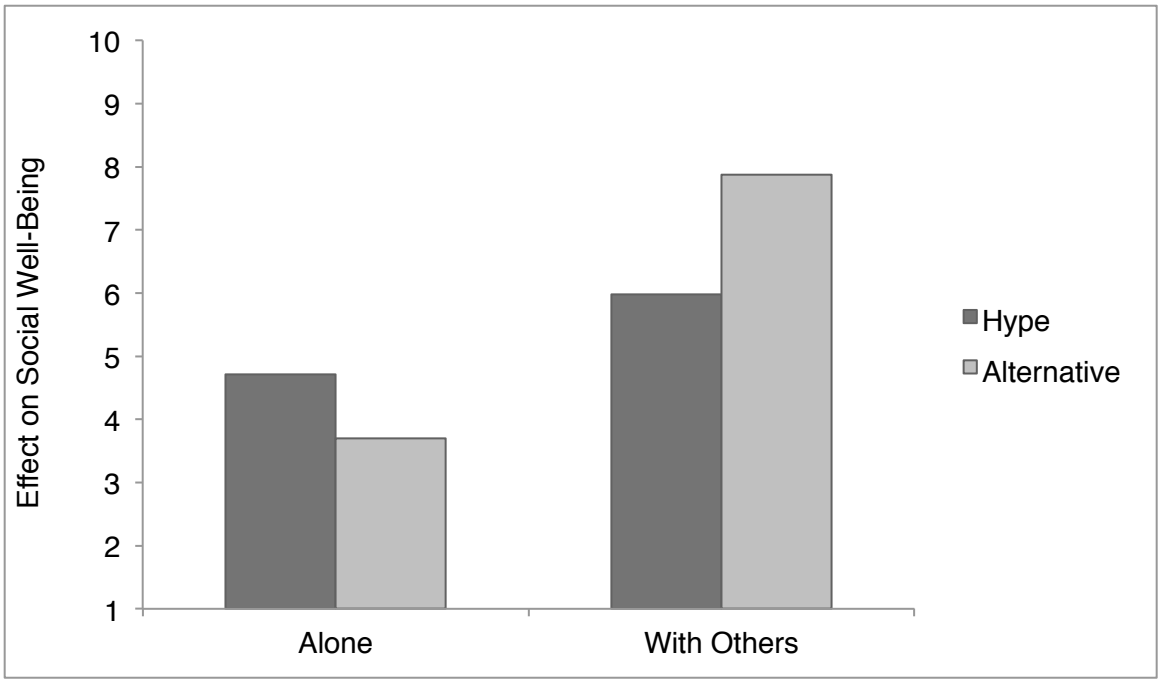
**Table 7. Full Results of Study 2**

| | | Part 1 *Hype* | | | Part 2 *Hype*Social* | | |
|---|---|---|---|---|---|---|---|
| | **Effect** | **estimate** | ***t*** | ***p*** | **estimate** | ***t*** | ***p*** |
| **Well-Being Composite** | Hype | -1.07 | -9.30 | <.001* | -0.82 | -5.25 | <.001* |
| | Social | | | | 1.16 | 7.33 | <.001* |
| | Hype*Social | | | | -0.64 | -2.82 | .005* |
| **Positive Emotions** | Hype | -0.91 | -7.26 | <.001* | -0.90 | -5.25 | <.001* |
| | Social | | | | 0.75 | 4.30 | <.001* |
| | Hype*Social | | | | -0.11 | -0.43 | .67 |
| **Engagement** | Hype | -1.44 | -9.34 | <.001* | -1.66 | -7.81 | <.001* |
| | Social | | | | -0.23 | -1.07 | .99 |
| | Hype*Social | | | | 0.47 | 1.50 | .13 |
| **Relationships** | Hype | -0.18 | -1.07 | .28 | 1.01 | 4.80 | .006* |
| | Social | | | | 4.13 | 19.30 | <.001* |
| | Hype*Social | | | | -2.85 | -9.33 | <.001* |
| **Meaning** | Hype | -0.79 | -5.48 | <.001* | -0.51 | -2.60 | <.001* |
| | Social | | | | 0.92 | 4.57 | <.001* |
| | Hype*Social | | | | -0.66 | -2.29 | .02 |
| **Achievement** | Hype | -2.02 | -12.85 | <.001* | -2.01 | -9.27 | <.001* |
| | Social | | | | 0.25 | 1.15 | .15 |
| | Hype*Social | | | | -0.05 | -0.16 | .88 |

*p* values are indicated as signficant using a Bonferroni adjusted $\alpha = .008$
Hype coded as 0=alternative activity, 1=hyped event
Social coded as 0=alone, 1=with others

In the model predicting the overall well-being composite measure, the hype effect, social effect, and the interaction term were all significant ($p$'s <.008, all statistics reported in table 7). Pursuing alternative activities was still better for overall well-being, but pursuing either activity with others was better than pursuing it alone. Furthermore, the difference between pursuing hype versus alternative activities was again reduced when participants were alone compared to when they were with others. Again it seems that the penalty of pursuing the hype is diminished when the hyped activity is social and the alternative is not.

**Figure 13. Mixed Effects Model Results From Study 2 Showing the Sole Instance in Which Hyped Events Benefited Well-Being Relative to Alternative Activities: The Effect on Social Well-Being When Participants Were Solitary**




When I ran the same model predicting PERMA's five dimensions of well-being, the pattern was no longer consistent across all dimensions (full results of all analyses are reported in table 7). While the significance of the interaction and the effect of being with others varied across the pleasure, engagement, meaning, and achievement items, the interpretation of the hype item remained consistent; hype had a significant and negative effect on each of these aspects of well-being. Social well-being, however, again showed a unique pattern in which pursuing hype seemed to pay off. Replicating study 1, when participants engaged in an activity alone, they reported their experience enhanced their relationships significantly more when they watched the hyped event compared to when they engaged in alternative activities. This analysis again supported the contention that watching hyped events confers social benefits when no one else is present.

### 3.4.3 Attractiveness of Alternatives

Finally, in this set of surveys I included a measure designed to assess a potential reason why people's well-being might suffer when they give in to the hype: that engaging in hyped events results in feeling that one's time could have been better spent. Specifically, in each of these studies I asked people what they would have done if they had done something different. I then asked participants how they felt about spending their time in the way that they did (watching the hyped event or the activity participants provided at the outset) instead of the alternative activity that they provided. Participants responded on a 7 point scale ranging from "Extremely Bad" to "Extremely Good." I expected that if hype was truly more likely to cause people to deviate from preferred alternative activities, people who engaged in the hype would indicate feeling worse about their decisions upon reflecting on the opportunity cost of those decisions. Indeed, the results confirmed this hypothesis. A mixed effect model controlling for whether participants were alone or with others, age, sex, race, and education and allowing for random effects of events and participants revealed a significant effect of engaging in the hype ($t(1,534.94) = -6.213$, $p < .0001$). The effect remains the same if analyzed using a simple regression only controlling for fixed effects of events and allowing only for random effects of participants ($M_{Hype} = 4.86$, $M_{Hype} = 4.29$, $t(1,597) = -6.051$, $p < .0001$). When people were asked to reflect on how else they might have spent their time, those who watched hyped events reported feeling worse about their decisions.

### 3.4.5 Discussion

In Study 2, I was able to replicate my original finding that hyped events largely hurt well-being compared to alternative activities, with the sole exception being a benefit to social well-being when participants were alone. The effect persisted even after the "fun and entertaining"

language used in Study 1 was removed from the study postings recruiting participants who had not engaged in hyped events. Study 2 also provided initial support for the idea that hyped events are more likely to cause people to deviate from relatively more preferable alternative activities.

While these contributions are valuable, Study 2 is still vulnerable to the critique that perhaps the samples of watchers and non-watchers differed in important ways other than watching or not watching hyped events. Thus, in the next set of studies, I sought to manipulate assignment to watch or not watch hyped events.[1]

### 3.5 Study 3

Study 3 was designed primarily to directly address concerns about lack of random assignment to engage versus not engage in hyped activities. I expected to replicate previous findings suggesting that hyped events are worse than alternative activities with regard to well-being with the sole exception of social aspects of well-being, where engaging with the hype might provide some unique benefits. Consistent with previous studies, I expected the social benefits of engaging with hype to be greatest among solitary participants.

This study also examined whether random assignment to additional hype about an event would affect people's likelihood of engaging with a hyped event. I argue that hype causes people to deviate from otherwise preferred activities; thus, I predicted that being exposed to incrementally more hype would make people more likely to engage with hyped events.

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[1] I conducted two versions each of Studies 3 and 4 but do not report the first versions because compliance was so low in the first versions that the data could not be analyzed. Compliance with random assignment to the hype condition in the first versions was less than 8%. The second version of each study attempted to improve compliance by paying participants more; selecting a hyped event that was significantly shorter (the first hyped event was over 3 hours and the second was under 5 minutes); and by providing participants randomly assigned to watch the hyped event with a link to a free, legal, online broadcast of the hyped event.

### 3.5.1 Method and Measures

Study 3 was a 3 (assigned to watch the hyped event, assigned not to watch the hyped event, free choice) x 2 (exposure to additional hype versus not exposed to additional hype) design. Three days before a hyped event (the 2017 Kentucky Derby, hereafter referred to simply as the Derby), I recruited participants who indicated that they (1) would be able to spend their time during the hyped event as they wished, (2) were willing to complete follow-up studies for additional payment, and (3) would watch a video they were asked to watch during the time of the event. The subjects who met these conditions (N=819) were then randomly assigned to either watch the Derby, not watch the Derby, or received no direction on how to spend their time. On the next day and the day of the Derby, subjects in all conditions received follow up surveys that required them to read (1) or watch (1) material related to the hyped event or unrelated to the hyped event (per condition, N= 753 who completed the two hype manipulation studies).

Forty-five minutes before the Derby began, I contacted all eligible participants reminding them that they had agreed to participate in a study that required them to (watch the Kentucky Derby, not watch the Kentucky Derby, control condition with no required activity) in 45 minutes. Participants in the Derby condition received a link to a free livestream of the Derby. After the Derby had ended, I contacted all participants with the final follow-up study. The final follow-up measured compliance (whether participants assigned to watch or not watch the derby did so). The follow up also included six measures of well-being. First, in this study I introduced an overall well-being item asking participants to indicate the extent to which their activity affected their overall well-being on an eleven point scale ranging from “definitely a negative experience to “definitely a positive experience.” Participants then responded to five measures assessing each of the PERMA dimensions which were identical to the measures used in studies 1

and 2. Finally, I included the rating of alternative activities item used in study 2, which asked participants what they might have done with their time instead and how they felt about their activities given that alternative. I also measured whether participants were fans of the hyped activity, whether they were fans of the winner, and fear of missing out. Five hundred sixty-one participants completed the final follow-up (74.5% response rate, 52% male).

### 3.5.2 Analyses and Results

I first examined the effect of the incremental hype manipulation. Exposure to additional hype had no significant effect on likelihood to watch the Derby in either of the assigned conditions (assigned to watch the Derby: 90% control versus 95% with additional hype; assigned not to watch the Derby 20% control versus 26% with additional hype) and no significant effect on choice in the control condition (25% control versus 28% with additional hype, all $p$'s > .13). The hype manipulation did not interact with condition nor exert a significant main effect on analyses related to well-being measures or attractiveness of alternatives and thus is not discussed further. Analyses reported below control for the incremental hype manipulation as well as for compliance, though substantive results are consistent whether these measures are included or not.

I next examined the effect of random assignment to watch the hyped event, not watch the hyped event, or to the control condition that did not stipulate an activity. The condition effect was significant for all measures of well-being (see table 8). I further examined this effect by making three comparisons: (1) engaging with hype versus being told not to and (2) engaging with hype versus having free choice and (3) being told not to engage in the hype versus having free choice. I expected to find that hype would have a negative effect on all measures of well-being with the exception of social well-being where the effect would be positive. I also expected that there would be no significant difference between being told not to engage in the hype and

having free choice on any measures of well-being. The results largely confirmed my hypothesis. Participants who watched hyped events reported doing so had a significantly less positive effect on overall well-being, positive emotion, engagement, meaning, and achievement compared to participants who were instructed either not to watch the derby or who had free choice. When it came to social well-being, however, those who watched the hyped event reported it had a more positive effect on their social well-being; this effect was significant contrasting the hype and non-hype conditions and marginal contrasting the hype and free choice conditions (see table 8 for full details on all analyses). In only one case was there a difference between the non-hype and free choice conditions; participants in the non-hype condition reported that their activities were less likely to make them feel like they had achieved something compared to participants in the free choice condition.

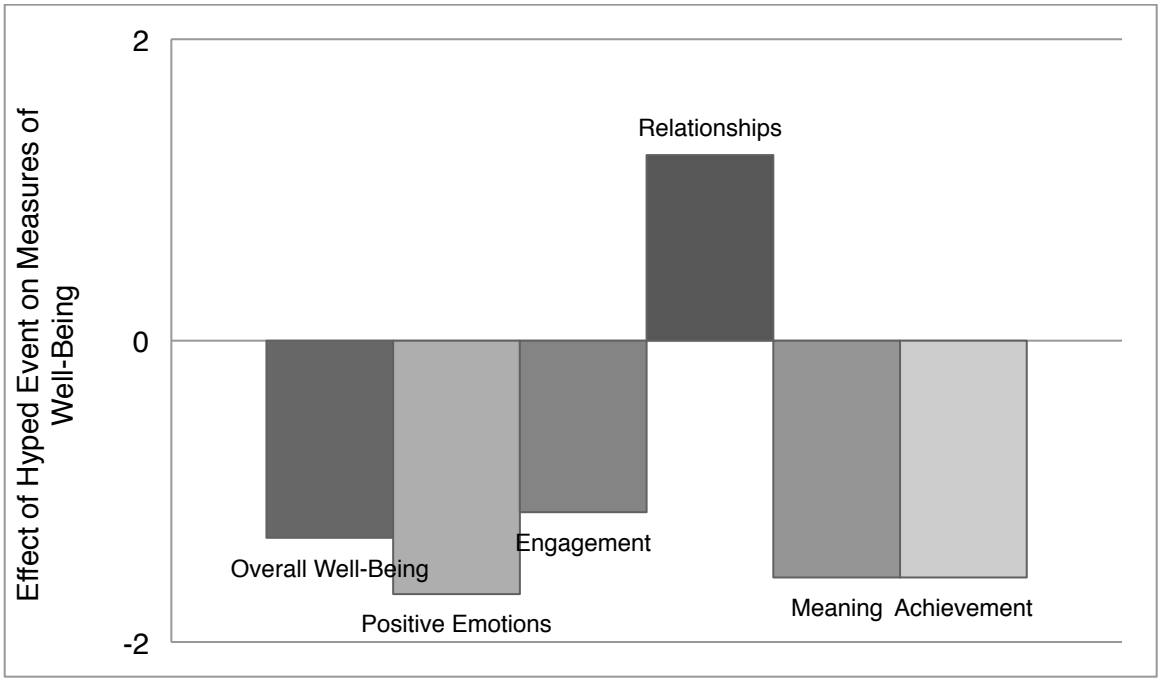
**Table 8. Results of Study 3 Condition Effect**

| | Assigned Activity | mean | sd | df | F | *p* | Contrasting Conditions | mean difference | F (1, 556) | *p* |
|---|---|---|---|---|---|---|---|---|---|---|
| **Overall Well-Being** | Hype | 7.92 | 2.43 | (2, 556) | 23.07 | <.001* | Hype vs. Free Choice | -1.33 | 33.49 | <.001* |
| | Non-Hype | 9.21 | 1.99 | | | | Hype vs. Non-Hype | -1.29 | 35.41 | <.001* |
| | Free choice | 9.25 | 1.95 | | | | Non-Hype vs. Free Choice | -0.04 | 0.12 | .73 |
| **Positive Emotions** | Hype | 5.77 | 2.87 | (2, 556) | 25.27 | <.001* | Hype vs. Free Choice | -1.78 | 41.91 | <.001* |
| | Non-Hype | 7.34 | 2.53 | | | | Hype vs. Non-Hype | -1.57 | 32.84 | <.001* |
| | Free choice | 7.55 | 2.33 | | | | Non-Hype vs. Free Choice | -0.21 | 0.29 | .59 |
| **Engagement** | Hype | 4.29 | 3.24 | (2, 556) | 7.32 | .01 | Hype vs. Free Choice | -1.23 | 12.84 | .001* |
| | Non-Hype | 5.33 | 3.29 | | | | Hype vs. Non-Hype | -1.04 | 8.48 | .01* |
| | Free choice | 5.52 | 3.23 | | | | Non-Hype vs. Free Choice | -0.19 | 0.31 | .58 |
| **Relationships** | Hype | 5.55 | 2.47 | (2, 556) | 19.91 | <.001* | Hype vs. Free Choice | 0.69 | 3.02 | .08 |
| | Non-Hype | 3.79 | 3.34 | | | | Hype vs. Non-Hype | 1.76 | 38.22 | <.001* |
| | Free choice | 4.86 | 3.38 | | | | Non-Hype vs. Free Choice | -1.07 | 20.20 | <.001* |
| **Meaning** | Hype | 4.78 | 3.01 | (2, 556) | 18.63 | <.001* | Hype vs. Free Choice | -1.68 | 33.73 | <.001* |
| | Non-Hype | 6.24 | 2.71 | | | | Hype vs. Non-Hype | -1.46 | 19.81 | <.001* |
| | Free choice | 6.46 | 2.75 | | | | Non-Hype vs. Free Choice | -0.22 | 1.39 | .24 |
| **Achievement** | Hype | 3.91 | 3.12 | (2, 556) | 16.37 | .001* | Hype vs. Free Choice | -1.87 | 32.09 | <.001* |
| | Non-Hype | 5.17 | 3.33 | | | | Hype vs. Non-Hype | -1.26 | 10.96 | .001* |
| | Free choice | 5.78 | 3.13 | | | | Non-Hype vs. Free Choice | -0.61 | 4.74 | .03 |

All analyses are reported controlling for the non-significant hype exposure manipulation and compliance

*p* values are indicated as significant using a Bonferroni adjusted $\alpha = .008$

**Figure 14. Study 3, Effect of Assignment to Watch a Hyped Event Versus Not Watching a Hyped Event or Having Free Choice on Measures of Well-Being**




Because results of previous studies were significantly qualified by whether participants reported being alone or with others, I also examined the condition by social environment interaction. Consistent with previous studies' findings, I expected to find that the benefits to social well-being of engaging with the hype compared to other activities would be greater when participants reported being alone. The condition by social environment interaction provided marginal support for this hypothesis ($F(1,555) = 2.42$, $p = .09$). Comparing conditions within social environment revealed that among solitary participants (n=361 total, 116 of whom were in the hype condition), those in the hype condition reported significantly greater benefits to social well-being compared to participants in either the free choice or non-hype conditions (see table 9). When participants were with others (n=200, 57 of whom were in the hype condition), however, the benefits to social well-being of being assigned to watch the hyped event were no longer significant. As for the other measures of well-being, the simple condition contrasts in either social environment revealed that hype had a directionally negative (often significantly so) effect on all measures of well-being save one (a non-significant but directionally positive effect

of hype on engagement among social participants compared to participants in the free choice condition). See table 9 for full details of all interaction analyses.

Finally, I examined a measure designed to replicate the finding from Study 2 that after reflecting on opportunity costs, people who engaged in the hype were more likely to feel bad about how they spent their time. While in Study 2 this finding is more compelling because it represented participants choosing on their own to deviate from preferred activities and in this study the item represents me randomly assigning participants in the hype condition to a less preferred activity, I wanted to assess whether having more attractive alternatives might explain the effects I found in this study. Consistent with Study 2, I asked all participants in the study if they had done something other than what they had done, what it might have been and then to indicate how they felt about how they spent their time given that alternative activity. Analyses using the same contrasts used in the well-being analyses above supported my prediction. After reflecting on how else they might have spent their time, participants randomly assigned to the hype condition reported feeling worse about how they spent their time than participants in the other conditions ($Mean_{Hype} = 4.71$, $Mean_{Non\text{-}Hype} = 5.00$, $Mean_{Free\ Choice} = 5.22$). This difference was significant contrasting hype and free choice ($F(1,556) = 11.48$, $p < .001$) but not significant contrasting hype and non-hype ($F(1,555) = 2.53$, $p = .11$).

### 3.5.3 Discussion

While this study did not reveal any significant effect of manipulating exposure to additional hype on either choice or well-being, it provides an incredibly valuable replication of previous results related to engaging with hyped events. Where previous studies measured

## Table 9. Results of Study 3 Condition by Social Environment Interaction

| | | | | *Alone* | | | | | | *With Others* | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **df** | **F** | ***p*** | **Assigned Activity** | **mean** | **sd** | **Contrasting Conditions** | **mean difference** | **F (1, 553)** | ***p*** | **Assigned Activity** | **mean** | **sd** | **Contrasting Conditions** | **mean difference** | **F (1, 553)** | ***p*** |
| **Overall Well-Being** | (2, 553) | 0.52 | .60 | Hype | 7.66 | 2.46 | Hype vs. Free Choice | -1.37 | 5.82 | <.001* | Hype | 8.47 | 2.28 | Hype vs. Free Choice | -1.04 | 20.19 | .005* |
| | | | | Non-Hype | 9.18 | 2.05 | Hype vs. Non-Hype | -1.52 | 7.71 | <.001* | Non-Hype | 9.32 | 1.83 | Hype vs. Non-Hype | -0.85 | 12.60 | .02 |
| | | | | Free choice | 9.03 | 2.07 | Non-Hype vs. Free Choice | 0.15 | 0.16 | .38 | Free choice | 9.51 | 1.78 | Non-Hype vs. Free Choice | -0.19 | 0.60 | .92 |
| **Positive Emotions** | (2, 553) | 3.94 | .02 | Hype | 5.25 | 2.99 | Hype vs. Free Choice | -2.05 | 9.18 | <.001* | Hype | 6.84 | 2.31 | Hype vs. Free Choice | -0.4 | 16.01 | .02 |
| | | | | Non-Hype | 7.38 | 2.55 | Hype vs. Non-Hype | -2.13 | 13.34 | <.001* | Non-Hype | 7.84 | 2.6 | Hype vs. Non-Hype | -1 | 13.21 | .41 |
| | | | | Free choice | 7.30 | 2.36 | Non-Hype vs. Free Choice | 0.08 | 0.44 | .73 | Free choice | 7.24 | 2.27 | Non-Hype vs. Free Choice | 0.6 | 0.04 | .26 |
| **Engagement** | (2, 553) | 3.56 | .03 | Hype | 3.84 | 3.08 | Hype vs. Free Choice | -1.61 | 4.60 | <.001* | Hype | 5.21 | 3.4 | Hype vs. Free Choice | 0.31 | 4.22 | .47 |
| | | | | Non-Hype | 5.48 | 3.27 | Hype vs. Non-Hype | -1.64 | 8.17 | <.001* | Non-Hype | 5.60 | 3.31 | Hype vs. Non-Hype | -0.39 | 6.01 | .53 |
| | | | | Free choice | 5.45 | 3.16 | Non-Hype vs. Free Choice | 0.03 | 0.63 | .99 | Free choice | 4.90 | 3.36 | Non-Hype vs. Free Choice | 0.7 | 0.25 | .18 |
| **Relationships** | (2, 553) | 2.42 | .09 | Hype | 4.96 | 2.36 | Hype vs. Free Choice | 2.05 | 4.35 | <.001* | Hype | 6.77 | 2.25 | Hype vs. Free Choice | 0.29 | 0.93 | .63 |
| | | | | Non-Hype | 3.41 | 3.00 | Hype vs. Non-Hype | 1.55 | 15.37 | <.001* | Non-Hype | 6.26 | 3.03 | Hype vs. Non-Hype | 0.51 | 9.36 | .12 |
| | | | | Free choice | 2.91 | 2.90 | Non-Hype vs. Free Choice | 0.50 | 3.57 | .07 | Free choice | 6.48 | 3.22 | Non-Hype vs. Free Choice | -0.22 | 16.76 | .20 |
| **Meaning** | (2, 553) | 0.92 | .40 | Hype | 4.42 | 2.94 | Hype vs. Free Choice | -1.90 | 5.94 | <.001* | Hype | 5.51 | 3.04 | Hype vs. Free Choice | -1.21 | 10.37 | .02 |
| | | | | Non-Hype | 6.06 | 2.74 | Hype vs. Non-Hype | -1.64 | 2.81 | <.001* | Non-Hype | 6.61 | 2.58 | Hype vs. Non-Hype | -1.1 | 7.43 | .08 |
| | | | | Free choice | 6.32 | 2.67 | Non-Hype vs. Free Choice | -0.26 | 0.57 | .37 | Free choice | 6.72 | 2.84 | Non-Hype vs. Free Choice | -0.11 | 0.14 | .84 |
| **Achievement** | (2, 553) | 1.35 | .26 | Hype | 3.63 | 3.02 | Hype vs. Free Choice | -2.19 | 3.52 | <.001* | Hype | 4.49 | 3.26 | Hype vs. Free Choice | -1.37 | 11.65 | .02 |
| | | | | Non-Hype | 4.92 | 3.35 | Hype vs. Non-Hype | -1.29 | 0.35 | .002* | Non-Hype | 5.74 | 3.09 | Hype vs. Non-Hype | -1.25 | 3.91 | .08 |
| | | | | Free choice | 5.82 | 3.18 | Non-Hype vs. Free Choice | -0.90 | 1.65 | .02 | Free choice | 5.86 | 3.21 | Non-Hype vs. Free Choice | -0.12 | 1.77 | .87 |

All analyses are reported controlling for the non-significant hype exposure manipulation and compliance

*p* values are indicated as significant using a Bonferroni adjusted $\alpha = .008$

participants' decision to engage with hyped events or not and controlled for as many potential confounds as possible, I could not rule out that there could have been an underlying difference in watchers and non-watchers that explained my findings. Because this study relied on random assignment to watch or not watch a hyped event and found the same pattern of results, I can be much more confident that the differences I found in this and previous studies are related to something specific to hyped events.

In the next study, I sought to once more replicate these effects using random assignment. I also sought to examine whether manipulating participants' baseline sense of social well-being would moderate the effect.

### 3.6 Study 4

Study 4 was designed to replicate the finding that there are unique social benefits to engaging with hyped events, to do so using random assignment, and to examine whether the social benefits of hyped events are moderated by randomly assigned baseline sense of social well-being. Post-hoc analyses of study 1 suggested that the magnitude of the benefits to social well-being of engaging with hyped events varied depending on general satisfaction with social aspects of one's well-being. This analysis suggested that among subjects who watched hyped events in solitude, those who reported a lower sense of social well-being in their life reported greater benefits to social well-being resulting from watching the hyped event. In this study, I sought to further examine this potential moderator by manipulating baseline sense of social well-being. Specifically, I randomly assigned participants to either reflect on a time of personal hardship (a control meant to be equivalent in terms of self-relevance and valence) or to reflect on a time that they felt socially excluded. I expected the latter condition would cause participants to

feel less satisfied with their social well-being and hypothesized that this decreased satisfaction would magnify positive social benefits associated with engaging with a hyped event.

The study was also designed to provide a new contrast for hyped events. Thus far in all studies, I have compared engaging with hyped events to doing an activity of one's choice. While study 3 tested a somewhat restricted version of this (anything participants wanted other than engaging with the hyped event), I had yet to contrast being assigned to watch a hyped event with being assigned to do some other specific activity. While this contrast is important, it is also difficult to operationalize in a manner that would provide useful, generalizable information. Assigning all participants to one specific task seemed likely to result in assigning a non-trivial percentage of those respondents to an activity that was neither relevant nor appealing to them. However, allowing for each participant to specify activities that were uniquely relevant and appealing to them would be akin to the free choice condition. In an attempt to balance these competing concerns, I randomly assigned a set of participants to a specific activity that allowed for a degree of personalization: to watch a video on YouTube. Participants randomly assigned to what I call the "specific alternative" condition were instructed that as part of the follow-up study, they would need to watch a video of their choice on YouTube at the time of the hyped event.

### 3.6.1 Method and Measures

Study 4 was thus a 3 (assigned to watch the hyped event, assigned to specific alternative, free choice) x 2 (control vs. social exclusion reflection) design. The day before a hyped event (the 2017 Kentucky Derby, hereafter referred to simply as the Derby), I posted a study recruiting participants who indicated that they (1) would be able to spend their time during the hyped event as they wished, (2) were willing to complete follow-up studies for additional payment, and (3) would watch a video they were asked to watch during the time of the event. The subjects who

met these conditions (N=806) were then randomly assigned to either watch the Derby, watch a YouTube video of their choice, or received no direction on how to spend their time. Participants were also randomly assigned to reflect on either a time of personal hardship or a time when they felt social excluded. This recruitment continued on to the next day (the day of the event) to ensure as large a sample as possible.

Forty-five minutes before the Derby began, I contacted all eligible participants reminding them that they had agreed to participate in a study that required them to (watch the Kentucky Derby, watch a youtube video of their choice, control condition with no required activity) in 45 minutes. Participants in the Derby condition received a link to a free, legal livestream of the Derby. After the Derby had ended, I contacted all participants with the final follow-up study. The final follow-up measured compliance (whether participants assigned to watch the derby reported doing so and whether participants assigned to watch videos on youtube reported doing so), the well-being items from study 1, the alternative activity ratings from study 2, and whether participants were alone or with others. I also measured whether participants were fans of the hyped activity, whether they were fans of the winner, and fear of missing out. Four hundred and eighty-nine participants completed the final follow-up (70.7% response rate, 52% male).

### 3.6.2 Analyses and Results

I report all analyses controlling for compliance. I first examined the assignment to activity manipulation and found the effect to be significant for all well-being measures and consistent with my expectations. For all well-being items other than social well-being, being assigned to watch the hyped event had a significant negative effect compared to being assigned to watch a YouTube video of your choice or having free choice (this effect was marginal comparing hype versus YouTube for achievement; see table 10 for full details of all analyses).

When it came to hype's effect on social well-being, however, hype appeared to have a positive effect on social well-being compared to the other conditions. This difference was significant contrasting the hype versus YouTube video conditions ($Mean_{Hype} = 5.15$, $Mean_{YouTube} = 3.66$, $F(1, 484)= 23.13$, $p < .001$) but not significant when contrasting the hype versus free choice conditions ($Mean_{Free\ Choice} = 4.74$;$F(1, 484)= .57$, $p = .45$). Interestingly, there was also an unanticipated difference between the YouTube and free choice conditions, with those in the free choice conditions reporting significantly greater benefits to their social well-being ($F(1,484)= 16.81$, $p <.001$). While I did not anticipate this significant difference, it is interesting to note that participants who had their choices explicitly constrained to precluded them from engaging with the hype reported significantly lower benefits to social well-being compared to both those who had free choice and those assigned to engage with the hype.

**Table 10. Results of Study 4 Condition Effect**

| | Assigned Activity | mean | sd | df | F | *p* | Contrasting Conditions | mean difference | F (1, 484) | *p* |
|---|---|---|---|---|---|---|---|---|---|---|
| **Overall Well-Being** | Hype | 8.13 | 1.95 | (2, 484) | 14.65 | <.001* | Hype vs. Free Choice | -1.13 | 23.86 | <.001* |
| | Specific Alternative | 9.06 | 2.23 | | | | Hype vs. Specific Alternative | -0.93 | 19.58 | <.001* |
| | Free choice | 9.26 | 1.75 | | | | Specific Alternative vs. Free Choice | -0.2 | 0.08 | .77 |
| **Positive Emotions** | Hype | 6.03 | 2.62 | (2, 484) | 17.04 | <.001* | Hype vs. Free Choice | -1.37 | 24.74 | <.001* |
| | Specific Alternative | 7.44 | 2.38 | | | | Hype vs. Specific Alternative | -1.41 | 26.23 | <.001* |
| | Free choice | 7.40 | 2.26 | | | | Specific Alternative vs. Free Choice | 0.04 | 0.11 | .74 |
| **Engagement** | Hype | 4.42 | 3.23 | (2, 484) | 4.41 | .01 | Hype vs. Free Choice | -0.8 | 4.60 | .03 |
| | Specific Alternative | 5.43 | 3.24 | | | | Hype vs. Specific Alternative | -1.01 | 8.17 | .004* |
| | Free choice | 5.22 | 3.19 | | | | Specific Alternative vs. Free Choice | 0.21 | 0.63 | .43 |
| **Relationships** | Hype | 5.15 | 2.96 | (2, 484) | 13.24 | <.001* | Hype vs. Free Choice | 0.41 | 0.57 | .45 |
| | Specific Alternative | 3.66 | 3.19 | | | | Hype vs. Specific Alternative | 1.49 | 23.13 | <.001* |
| | Free choice | 4.74 | 3.37 | | | | Specific Alternative vs. Free Choice | -1.08 | 16.81 | <.001* |
| **Meaning** | Hype | 5.03 | 2.99 | (2, 484) | 8.83 | <.001* | Hype vs. Free Choice | -1.25 | 16.04 | <.001* |
| | Specific Alternative | 6.12 | 2.85 | | | | Hype vs. Specific Alternative | -1.09 | 9.56 | .002* |
| | Free choice | 6.28 | 2.77 | | | | Specific Alternative vs. Free Choice | -0.16 | 0.60 | .44 |
| **Achievement** | Hype | 4.29 | 3.18 | (2, 484) | 7.01 | .001* | Hype vs. Free Choice | -1.31 | 14.03 | <.001* |
| | Specific Alternative | 5.07 | 3.32 | | | | Hype vs. Specific Alternative | -0.78 | 3.27 | .07 |
| | Free choice | 5.6 | 3.23 | | | | Specific Alternative vs. Free Choice | -0.53 | 3.29 | .07 |

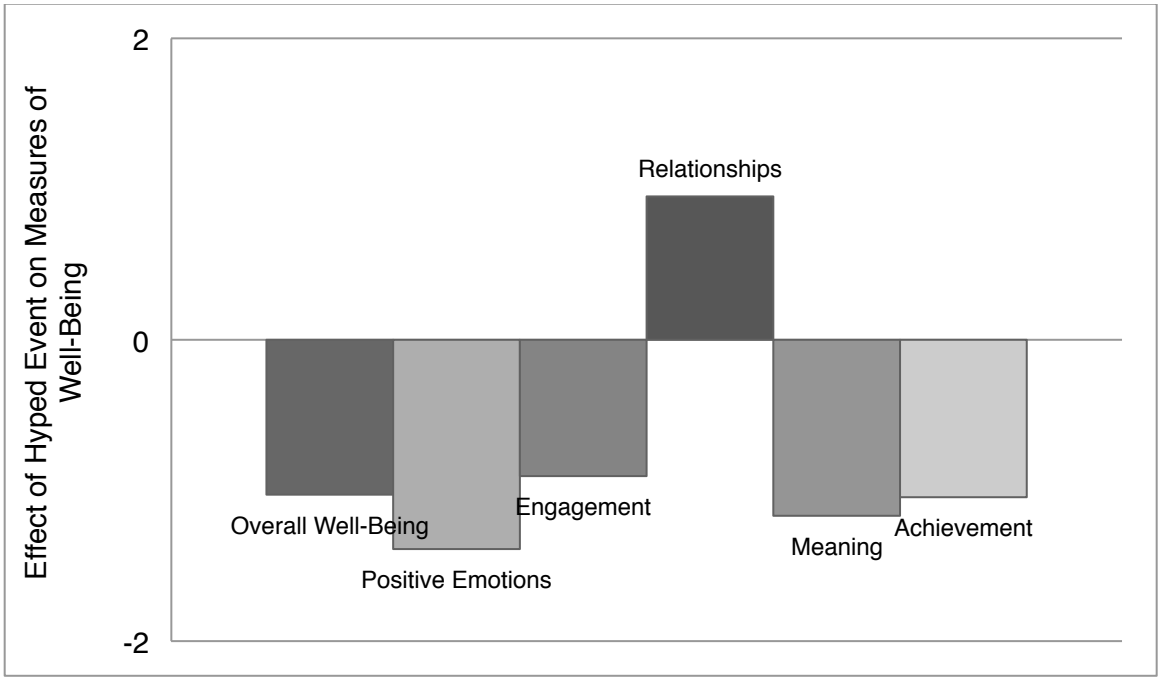
All results are controlling for the social exclusion vs. control (personal hardship) manipulation and compliance.
*p* values are indicated as significant using a Bonferroni adjusted $\alpha = .008$

I next examined whether the social exclusion manipulation worked as intended, magnifying the social benefits of engaging with the hype compared to participants in a control condition. The activity by social exclusion manipulation was marginally significant predicting social well-being ($F(2,482)= 2.58$, $p = .08$) and was not a significant predictor of any other

measure of well-being ($p$'s > .35). Examining the condition effects within the social exclusion and control manipulations revealed a pattern of results consistent with my expectations; participants in the social exclusion conditions reported greater benefits to their social well-being resulting from engaging with the hype compared to participants in the other two conditions (see table 11 for full details of all analyses).

Finally, I examined the alternative activity ratings. The measure was identical to the measure used in studies 2 and 3, in which I asked participants to indicate how they felt after reflecting on the opportunity costs of their activities. I expected to replicate the results of studies 2 and 3 which found that participants in the hype condition reported feeling worse after reflecting on opportunity costs of their activities compared to participants in the other two conditions. I conducted these analyses controlling for compliance and the social exclusion manipulation both of which were non-significant and did not interact with activity. There was a marginal effect of activity in predicting how participants felt after reflecting on the opportunity costs of their activities ($F(2, 484)= 2.75$, $p =.06$). After reflecting on how else they might have spent their time, participants randomly assigned to the hype condition reported feeling worse about how they spent their time compared to participants in the other conditions ($Mean_{Hype} = 4.81$, $Mean_{Specific\ Alternative} = 5.05$, $Mean_{Free\ Choice} = 5.18$), though the difference was only significant comparing participants assigned to hype versus participants assigned to free choice ($F(1, 484) = 5.40$, $p =.02$) and did not reach significance when contrasting participants assigned to hype versus assigned to watch YouTube ($F(1, 484) = 1,97$, $p =.16$). The difference between participants assigned to watch YouTube versus participants who had free choice was also not significant ($F(1, 484) = .71$, $p =.40$).

**Figure 15. Study 4, Effect of Assignment to Watch a Hyped Event Versus Watch YouTube or Having Free Choice on Measures of Well-Being**




### 3.6.3 Discussion

Study 4 provides another valuable demonstration of the effect of hyped events on well-being, and like study 3, did so by randomly assigning participants to activities. Study 4 again found that engaging with hyped events is costly to well being with a single exception: social well-being. When it comes to social well-being, participants who engaged in hyped events reported their activity was more beneficial than participants assigned to alternative activities or participants who had free choice of how to spend their time. This study also identified a moderating factor: baseline social well-being. In this study, the benefits to social well-being of engaging with hyped events were greater for people with lower baseline satisfaction with social well-being.

## Table 11. Results of Study 4 Condition Effect by Social Exclusion Manipulation

| | | | | | *Social Exclusion* | | | | | | | *Control (Personal Hardship)* | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Effect** | **df** | **F** | ***p*** | **Assigned Activity** | **mean** | **sd** | **Contrasting Conditions** | **mean difference** | **F (1, 484)** | ***p*** | **Assigned Activity** | **mean** | **sd** | **Contrasting Conditions** | **mean difference** | **F (1, 484)** | ***p*** |
| **Overall Well-Being** | Activity | (2, 482) | 11.19 | <.001* | Hype | 8.29 | 2.04 | Hype vs. Free Choice | -0.82 | 5.82 | .02 | Hype | 7.97 | 1.87 | Hype vs. Free Choice | -1.42 | 20.19 | <.001* |
| | Social Exclusion | (1, 482) | 1.16 | .28 | Specific Alternative | 9.09 | 2.25 | Hype vs. Specific Alternative | -0.80 | 7.71 | .006* | Specific Alternative | 9.03 | 2.23 | Hype vs. Specific Alternative | -1.06 | 12.60 | <.001* |
| | Activity * Social Exclusion | (2, 482) | 1.03 | .36 | Free-choice | 9.11 | 1.83 | Specific Alternative vs. Free Choice | -0.02 | 0.16 | .69 | Free-choice | 9.39 | 1.66 | Specific Alternative vs. Free Choice | -0.36 | 0.60 | .44 |
| **Positive Emotions** | Activity | (2, 482) | 9.74 | <.001* | Hype | 6.21 | 2.7 | Hype vs. Free Choice | -1.19 | 9.18 | .003* | Hype | 5.87 | 2.55 | Hype vs. Free Choice | -1.82 | 16.01 | <.001* |
| | Social Exclusion | (1, 482) | 0.78 | .38 | Specific Alternative | 7.6 | 2.31 | Hype vs. Specific Alternative | -1.39 | 13.34 | <.001* | Specific Alternative | 7.27 | 2.46 | Hype vs. Specific Alternative | -1.4 | 13.21 | <.001* |
| | Activity * Social Exclusion | (2, 482) | 0.27 | .76 | Free-choice | 7.40 | 1.88 | Specific Alternative vs. Free Choice | 0.20 | 0.44 | .51 | Free-choice | 7.39 | 2.59 | Specific Alternative vs. Free Choice | -0.12 | 0.04 | .84 |
| **Engagement** | Activity | (2, 482) | 3.45 | .03 | Hype | 4.7 | 3.32 | Hype vs. Free Choice | -0.54 | 4.60 | .03 | Hype | 0.933 | 0.33 | Hype vs. Free Choice | 0.483 | 4.22 | .03 |
| | Social Exclusion | (1, 482) | 1.14 | .29 | Specific Alternative | 5.48 | 3.2 | Hype vs. Specific Alternative | -0.78 | 8.17 | .004* | Specific Alternative | 2.611 | 0.11 | Hype vs. Specific Alternative | -1.678 | 6.01 | .01 |
| | Activity * Social Exclusion | (2, 482) | 0.31 | .73 | Free-choice | 5.24 | 3.21 | Specific Alternative vs. Free Choice | 0.28 | 0.63 | .43 | Free-choice | 0.45 | 0.5 | Specific Alternative vs. Free Choice | 2.161 | 0.25 | .62 |
| **Relationships** | Activity | (2, 482) | 8.94 | <.001* | Hype | 5.79 | 2.84 | Hype vs. Free Choice | 1.23 | 4.35 | .04 | Hype | 4.53 | 2.96 | Hype vs. Free Choice | -0.39 | 0.93 | .33 |
| | Social Exclusion | (1, 482) | 5.08 | .02 | Specific Alternative | 4.05 | 3.14 | Hype vs. Specific Alternative | 1.74 | 15.37 | <.001* | Specific Alternative | 3.24 | 3.22 | Hype vs. Specific Alternative | 1.29 | 9.36 | .002* |
| | Activity * Social Exclusion | (2, 482) | 2.58 | .08 | Free-choice | 4.56 | 3.17 | Specific Alternative vs. Free Choice | -0.51 | 3.57 | .06 | Free-choice | 4.92 | 3.56 | Specific Alternative vs. Free Choice | -1.68 | 16.76 | <.001* |
| **Meaning** | Activity | (2, 482) | 5.99 | .002* | Hype | 5.3 | 2.96 | Hype vs. Free Choice | -1.08 | 5.94 | .02 | Hype | 4.76 | 3.00 | Hype vs. Free Choice | -1.43 | 10.37 | .001* |
| | Social Exclusion | (1, 482) | 1.19 | .28 | Specific Alternative | 6.13 | 2.81 | Hype vs. Specific Alternative | -0.83 | 2.81 | .09 | Specific Alternative | 6.10 | 2.92 | Hype vs. Specific Alternative | -1.34 | 7.43 | .007* |
| | Activity * Social Exclusion | (2, 482) | 0.30 | .74 | Free-choice | 6.38 | 2.43 | Specific Alternative vs. Free Choice | -0.25 | 0.57 | .45 | Free-choice | 6.19 | 3.04 | Specific Alternative vs. Free Choice | -0.09 | 0.14 | .71 |
| **Achievement** | Activity | (2, 482) | 5.87 | .003* | Hype | 4.66 | 3.19 | Hype vs. Free Choice | -0.90 | 3.52 | .06 | Hype | 3.93 | 3.16 | Hype vs. Free Choice | -1.71 | 11.65 | <.001* |
| | Social Exclusion | (1, 482) | 1.64 | .20 | Specific Alternative | 5.06 | 3.17 | Hype vs. Specific Alternative | -0.40 | 0.35 | .55 | Specific Alternative | 5.09 | 3.51 | Hype vs. Specific Alternative | -1.16 | 3.91 | .05 |
| | Activity * Social Exclusion | (2, 482) | 0.69 | .50 | Free-choice | 5.56 | 3.03 | Specific Alternative vs. Free Choice | -0.50 | 1.65 | .20 | Free-choice | 5.64 | 3.43 | Specific Alternative vs. Free Choice | -0.55 | 1.77 | .18 |

All analyses are reported controlling for compliance.
*p* values are indicated as significant using a Bonferroni adjusted $\alpha = .0069$

In my final set of studies, I sought to use the findings of the first set of studies to increase the benefits that participants receive from engaging with hyped events using a neutral manipulation as opposed to the negative (social exclusion) manipulation I used in study 4.

## 3.7 Study 5

In this study, I wanted to examine whether drawing participants' attention to the social aspects of a hyped event would increase the benefits that they would receive from participating in the hyped event.

### 3.7.1 Basic Method and Measures

This study was a three-part quasi-experimental field study, with data collected before, during and after a single hyped event: Super Bowl 50. In the first part of the study I recruited participants from MTurk who indicated they did not have to work that evening and could spend their time as they wished. I made the study available for the 5 hours prior to kick-off. Participants responding to the survey ($N$= 788, $M_{Age}$ = 35.9, 50% male) indicated whether or not they planned to watch the Super Bowl, and if not (32% of participants), what they planned to do instead.

I then asked participants if they were willing to complete follow up surveys either during halftime or after the game. I randomly assigned participants who were willing to complete follow up surveys and planned to watch the game to one of two conditions. In one condition, I instructed participants to: "focus on paying attention to the details of the game. Whether that means focusing on the play calling, the officiating, or just thinking about the importance of the game for each team and player, try not to lose sight of the specifics of the game." In the other condition, I instructed participants to: "focus on connecting with other people. Whether that means the people you're watching the game with, discussions about the game online, or just

thinking about the fact that you're engaging in a shared experience with millions of other people, try not to lose sight of the social element of the experience." This manipulation served as the independent variable for later analyses. I predicted that focusing on the social elements of the game would improve well-being compared to focusing on the details of the game but only among participants who watched the game alone.

I solicited participants who were willing to complete follow-ups with two later surveys. One was available only during halftime (to control for any effect of dramatic changes in the game, $N$=337, 43% response rate, $M_{Age}$ =36.6, 49% Male, 72% watching the Super Bowl) and the other was available for 24 hours after the game ended ($N$=588, 75% response rate, $M_{Age}$ =36.17, 51% Male, 69% watched the Super Bowl). The nearly identical surveys asked participants whether they were watching or had watched the game and if they had not, what they had done instead. The surveys also asked participants to report whether their experience had been positive or negative for their overall well-being (11 point scale ranging from "Definitely a negative experience" to "Definitely a positive experience").

In contrast to the earlier studies, I use a single item measure of well-being in this study to avoid demand effects associated with manipulating focus on social benefits in the condition of interest and then measuring effects on social well-being. Relying on a single-item measure of well-being in this study means I will not be able to examine effects separately for each dimension, however, based on previous results I would predict no effects on the positive emotions, engagement, meaning, and achievement dimensions and the only condition in which I would predict a difference, social relationships, would be subject to demand effects. In short, limiting the dependent variable to only the effect on overall well-being should only prejudice the results against my hypothesis.

### 3.7.2 Analyses and Results

I conducted the analyses using only participants who watched the game and thus, received the manipulation (N=485). I expected to find that focusing on the social elements of the game would improve participants' well-being relative to focusing on the details of the game but that this improvement would occur only among participants who watched the game alone and not among participants who watched the game with others.

The analyses supported my prediction. A mixed effects model allowing for random effects of participant and time period during which the measure was taken revealed a significant interaction of the manipulation to focus on the details of the game or the social elements of the game and whether participants watched the game alone or with others ($t(442.07) = -2.38$, $p = .02$). Decomposing the interaction, I find that when participants watched the game alone, focusing on the social benefits of the game resulted in greater benefits to well-being compared to focusing on the details of the game ($t(120.79) = 2.37$, $p = .02$). The manipulation had no effect when participants watched the game with others ($t(20.09) = -0.6$ $p = .57$). Analyses for each time point using a simple linear model revealed consistent results both using only half time responses (half time: interaction $t(234) = -2.13$, $p = .03$, condition simple effect among participants who watched alone $t(234) = 2.28$, $p = .03$, condition simple effect among participants who watched with others $t(234) = -0.10$, $p = .71$), and using only post-game responses (half time: interaction $t(395) = -1.80$, $p = .07$, condition simple effect among participants who watched alone $t(395) = 1.61$, $p = .11$, condition simple effect among participants who watched with others $t(395) = -0.82$, $p = .41$).

### 3.7.3 Discussion

The results of Study 5 bolster the view that the benefits of hype on well-being are largely limited to social well-being. Here, I find that manipulating the degree to which people focus on the social nature of a hyped event improves the well-being implications of that event compared to focusing on the details of the event, but only when respondents are alone. This pattern of results suggests that framing hyped events as communal experiences can increase social connectedness in viewers who are objectively alone.

## 3.8 Study 6

This study was designed to serve as both a replication of study 5 and as a test of the hypothesis that hyped events are particularly well-suited to strengthening weak (as opposed to strong) social ties.

### 3.8.1 Basic Method and Measures

This study was a three-part quasi-experimental field study, with data collected before, during and after a single hyped event: Super Bowl 51. In the first part of the study I recruited participants from MTurk. In contrast to Study 5 in which participants were recruited with language stipulating that they did not have to work and could spend their time as they wished, participants in this study were only told that the study would ask them about their plans for the day and that there would be follow-up studies. This first collection was available for the 7 hours prior to kick-off. Participants responding to the survey ($N$=1,238, $M_{Age}$ = 36.5, 51% male) indicated whether or not they planned to watch the Super Bowl, and if not (32% of participants), what they planned to do instead.

I then asked participants if they were willing to complete follow up surveys either during halftime or after the game. I randomly assigned participants who were willing to complete follow

up surveys and planned to watch the game to one of two conditions. In one condition, I instructed participants to: “focus on paying attention to the details of the game. Whether that means focusing on the play calling, the officiating, or just thinking about the importance of the game for each team and player, try not to lose sight of the specifics of the game.” In the other condition, I instructed participants to: “focus on connecting with other people. Whether that means the people you're watching the game with, discussions about the game online, or just thinking about the fact that you're engaging in a shared experience with millions of other people, try not to lose sight of the social element of the experience.” This manipulation served as the independent variable for later analyses. I predicted that focusing on the social elements of the game would improve well-being compared to focusing on the details of the game but only among participants who watched the game alone.

I solicited participants who were willing to complete follow-ups ($N$=1,137, $M_{Age}$ = 36.1, 52% male) with two later surveys. One was available only during halftime (to control for any effect of dramatic changes in the game, $N$=439, 39% response rate, $M_{Age}$ =37.1, 55% Male, 74% watching the Super Bowl) and the other was available for 48 hours after the game ended ($N$=886, 78% response rate, $M_{Age}$ =36.4, 53% Male, 69% watched the Super Bowl). The nearly identical surveys were consistent with study 5 in that they asked participants whether they were watching or had watched the game and if they had not, what they had done instead as well as to report whether their experience had been positive or negative for their overall well-being (11 point scale ranging from “Definitely a negative experience” to “Definitely a positive experience”). In contrast to study 4, the study also asked participants to indicate to what extent they thought their afternoon activities affected their relationships with those closest to them and with people who

they were not extremely close to on 11 point scales ranging from “definitely did not improve” to definitely did improve.”

### 3.8.2 Analyses and Results

This study was designed to test two different hypotheses. The first prediction, was a replication of Study 5 which found that among people who watched the hyped event, those who focused on the social aspects of the experience reported higher overall well-being than those who focused on the details of the experience.

Consistent with the analyses approach used in study 5, I conducted these analyses using only participants who watched the game and thus, received the manipulation (N=920 responses, 783 unique participants). I expected to find that focusing on the social elements of the game would improve participants’ well-being relative to focusing on the details of the game but that this improvement would occur only among participants who watched the game alone and not among participants who watched the game with others.

The analyses supported my prediction. A mixed effects model allowing for random effects of participant and time period during which the measure was taken revealed a significant interaction of the manipulation to focus on the details of the game or the social elements of the game and whether participants watched the game alone or with others ($t(569.49) = -2.48$, $p = .01$). Decomposing the interaction, I find that when participants watched the game alone, focusing on the social benefits of the game resulted in higher reported well-being than focusing on the details of the game ($t(9.89) = 2.37$, $p = .04$) while the manipulation had no effect when participants watched the game with others ($t(1.69) = 0.97$ $p = .90$).

When I examined the analyses for each time point (halftime and post-game) using a simple linear model, however, the results only held for post game. Examining only within half

time responses, focusing on the social aspects of the game had a directional but non-significant effect of improving overall well-being among participants who were alone (half time: interaction t (312) = 0.564, p = .57, condition simple effect among participants who watched alone t (312) = 1.23, p = .22, condition simple effect among participants who watched with others t (312) = 1.17, p = .24). Examining only within post-game responses, however, I found results consistent with the overall analyses and with the results of study 5 where focusing on the social aspect of the game was more beneficial for participants' overall well-being (half time: interaction t (600) = 2.57, p = .01, condition simple effect among participants who watched alone t (600) = 2.23, p = .03, condition simple effect among participants who watched with others t (600) = -1.28, p = .20).

I next examined my second hypothesis, that hyped events are particularly well-suited to strengthening weak (as opposed to strong) social ties. In contrast to the first analysis which used only responses of participants who watched the Super Bowl and thus received the focus manipulation, this analyses compared participants who watched the Super Bowl and respondent who engaged in alternative activities. To test this hypothesis, I compared participant responses about the activities' effect on their close and distant social bonds with others. I expected to find that participants who watched the Super Bowl versus engaged in alternative activities would report a greater positive effect on distant social relationships but no difference in effect on close social relationships.

Before running the main analyses, I examined whether or not the focus manipulation (which occurred only among participants who watched the game) had any effect on responses to the two social benefits items. I was concerned that participants who were asked to "focus on the social aspects of the game" might report significantly greater effects of the experience on either

their close or distant social relationships. Both simple and mixed effects models predicting the effect of the focus manipulation on the social relationships items showed no evidence of any effect of the focus manipulation on reported benefits to social relationships (all condition *p*'s > .25). The effect of the focus manipulation was also non-significant when I accounted for whether participants were alone or with others (all condition *social interaction *p*'s > .35). Thus, I report all later analyses not controlling for the focus manipulation below. The interpretation of the later analyses does not change if the focus manipulation is included as a predictor.

I first tested this hypothesis combining responses from both half-time and after the game and analyzing using a mixed effect model controlling for random effects of participant and time period. I expected the effect on social relationships would depend both on whether participants watched the Super Bowl or engaged in alternative activities and the type of social relationship. Specifically, I expected to find that participants who watched the Super Bowl would report it improved their more distant social relationships compared to participants who engaged in alternative activities, while there would be no difference in the effect of activity on close social relationships. The results of my analyses provided repeated and robust support for my predictions. While I had no prediction on how this effect might differ between participants who were alone versus with others, because being alone versus with others exerted such a strong effect in all previous studies I first examined whether the relationship type by activity interaction was qualified by being alone versus with others. The three way interaction was marginally significant ($p$ =.07) but only qualified the size of the interaction of interest and not the interpretation (activity*relationship type simple interaction among participants who reported being alone $F(1, 1{,}717.43) = 5.65$, $p$ =.02, among participants who reported being with others $F(1, 1{,}717.43) = 28.00$, $p$ <.0001). Decomposing the interaction further, I find support for my

prediction that there would be no difference in the effect of engaging in a hyped event versus an alternative activity when it came to the effect on close relationships (among participants who were alone: $F(1, 1{,}369.52) = 0.74$, $p = .39$, with others: $F(1, 1{,}384.74) = 0.91$, $p = .34$) but that there would be a difference when it came to more distant social bonds, with hyped events strengthening distant social bonds to a greater degree than alternative activities (among participants who were alone: $F(1, 1{,}369.52) = 8.53$, $p = .004$, with others: $F(1, 1{,}384.74) = 13.38$, $p = .0003$). The effect remained robust when only the significant main effect of being alone versus with others was included in the model and when it was removed from the model entirely.

To examine the robustness of the effect, I then conducted analyses on only half time and only post game responses using mixed design ANOVA's (accounting for the between subjects nature of engaging in the hyped activity versus an alternative event and the within subjects relationship type manipulation). I found that the results were largely consistent. While the three-way interaction of being alone versus with others, relationship type, and engaging with hype was not significant among half-time respondents and was marginally significant among post-game responses (half time $p = .66$, post game $p = .06$), the result of interest remained consistent. The effect of watching the game on close relationships was not significant (simple effect of watching the hyped event at half time: $F(1, 435) = 0.59$, $p = .44$; simple simple effect of watching the game alone post game: $F(1, 877) = 1$, $p = .32$, simple simple effect of watching the game with others post game: $F(1, 877) = 0.91$, $p = .34$). The effect of watching the game on more distant social ties, however, was significant (simple effect of watching the hyped event at half time: $F(1, 435) = 11.03$, $p = .0009$; simple simple effect of watching the game alone post game: $F(1, 877) = 4.89$, $p = .03$, simple simple effect of watching the game with others post game: $F(1, 877) = 9.57$, $p = .002$).

### 3.8.3 Discussion

The results of Study 6 provided additional support for the contention that the benefits of hype on well-being are largely limited to social well-being and went one step further to examine exactly what aspect of social well-being hype benefits. I again found that focusing on the social nature of a hyped event improved the well-being implications of that event compared to focusing on the details of the event, but only when respondents were alone. I also found that hyped events are particularly suited to strengthening weaker, more distant social ties but do not provide any significant benefits to stronger, closer social ties.

## 3.9 General Discussion

Hyped events are cultural touch points that are difficult to ignore – and difficult to skip. This reality is reflected in today's media entertainment landscape: broadcast and social media reminders of commercial events have become increasingly common and difficult for people to ignore (Berger and Milkman 2012; Berger and Schwartz 2011). Between the commercials, news reports, and social media posts, anyone with a television, radio, or smartphone can't escape the chatter prior to Super Bowl Sunday (Berger and Heath 2005). By investing substantial resource on hyping events, entertainment distributors manage to cut through the clutter and garner millions of viewers.

In this essay, I highlight how consumers of entertainment are not uniformly harmed by hype. Giving into hype helps people feel socially connected to others, specifically distant others. This benefit is not trivial: a connection to others is a foundational aspect of well-being (Baumeister and Leary 1995; Cacioppo et al. 2008), and feeling socially excluded is profoundly painful (MacDonald 2009; MacDonald and Leary 2005). When people were alone (Studies 1, 2, and 3) or dissatisfied with their social well-being (Study 4), I find that they were able to derive

unique social benefits from hyped events. Building on this insight, in Studies 5 and 6 I find that instructing solitary viewers to focus on the social elements of a hyped event boosted the benefits to viewers' well-being.

The unique benefits of hype are not without costs. In fact, my analysis reveals that the single well-being benefit of hype, social well-being, is often offset by the costs to competing dimensions of well-being. People report deriving more positive affect, engagement, meaning, and achievement from alternate activities compared to a wide range of hyped activities. Thus, although the commercial benefits of hype are quite extensive, I show that the benefits of hype for viewers' psychological health are limited.

Hype is everywhere, and increasingly so. Modern life also affords consumers a tremendous amount of choice over how we spend our time. Giving into the hype comes at a cost, most notably the opportunity cost of not pursuing other non-hyped, intrinsically motivating interests. Given the limited benefits of hype, my data lend themselves to a straightforward recommendation: unless you are alone and want to feel connected to others, don't believe the hype.

# Chapter 4 – Contributions

Daniel Kahneman, one of the modern fathers of the study of well-being, has stated that there are traps to thinking about and studying well-being that need to be dealt with. The first is a reluctance to admit complexity. If there is one thing I am confident that I have accomplished in my dissertation, it is an embrace of the complexity of well-being. The second trap Kahneman references is the focusing illusion, whereby drawing people's attention to any single aspect of their lives will lead them to overestimate its importance (Kahnemen et al. 2006; Schkade and

Kahneman 1998). The overarching thesis in my dissertation is that asking people to simultaneously consider multiple contributing dimensions of well-being can both make sense of previous inconsistent findings and lead to new insights. In the two essays of my dissertation, I built on prior research to develop a strategy for studying well-being as a dynamic process that can accomplish these goals.

In my first essay, I use a dynamic approach to examine how well-being evolves over the lifespan, a question which has thus far produced equivocal findings in the literature. I find that using multiple measures of well-being, examining how each measure varies independently, and sampling across a sufficiently large range of ages, I am able to make sense of why previous work has led to contradictory findings; the evolution of each measure varies and thus generalizing across studies that measured different dimensions is difficult. In my study, I also find that accounting for the five dimensions of well-being included in the PERMA model better predicts people's assessments of their overall well-being compared to the common strategies of generalizing from only measures of positive emotion or only measures of meaning to overall well-being. In this essay, I was also able to examine the effect of different strategies of optimizing well-being, namely trying to "have it all" versus prioritizing. In contrast to my hypothesis that prioritizing would be associated with greater overall well-being, the opposite proved to be true. The data showed that on average people who tried to have it all reported greater overall well-being, particularly when they were older.

In my second essay, I examined how using a dynamic approach to studying well-being can illuminate the often complex tradeoffs that people are faced with when making decisions as seemingly minor as how to allocate their leisure time. By measuring how the choice to engage with hyped events affected five dimensions of well-being, I was able to identify that hype is

largely costly to consumer well-being but does seem to provide an opportunity to enhance social well-being. The results of four studies suggest that when hype causes to people to deviate from activities more in line with their values, goals, and preferences, their positive emotions, engagement, sense of meaning, and sense of achievement all suffer. However, hyped events did seem to provide a unique sense of social well-being to participants who were solitary or who felt particularly negative about their current social well-being. I then used the insights gleaned from this initial set of studies to develop a strategy for improving the benefits to well-being people receive from engaging with hyped events, namely by focusing watchers' attention on the social aspects of hyped events. Two studies supported the effectiveness of this strategy, which was uniquely informed by the dynamic approach used in the first set of studies.

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# Appendix 1 – Figure 1 Data

The data for figure 1 were compiled using Google Scholar and Web of Science. I searched for articles in each journal and year that included the term well-being in the text of the article on both Google Scholar and Web of Science (the search service provided by the Institute for Scientific Information). I ensured that no article was double-counted. I created the figure using unadjusted count data compiled from these searches.

# Appendix 2 – Expanded Table 1

The expanded version of Table 1, below, includes information on the DV used in and age range of respondents for each study included in Table 1.

**Table A2. Essay 1, Expanded Summary of Findings on Well-Being Over the Lifespan**

| Study | Data | Cross-Sectional or Longitudinal | Controls | Finding | Measures | Ages Sampled |
|---|---|---|---|---|---|---|
| **Alesina, Di Tella and MacCulloch 2004** | US General Social Surveys, Eurobarometer | CS | Yes | **inverted U** | **USGSS** ‘‘Taken all together, how would you say things are these days, would you say that you are very happy, pretty happy, or not too happy?’’ and **Eurobarometer** "On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead?’’ | Authors do not report age ranges. Range should be 18-89 based on datasets and years used. |
| **Blanchflower and Oswald 2008** | US General Social Surveys, Eurobarometer, UK Labour Force Survey, World Values Survey, Latinobarometer, Asiabarometer | CS | Yes | **U shaped/cubic** Cubic when non-parametric | **USGSS** ‘‘Taken all together, how would you say things are these days e would you say that you are very happy, pretty happy, or not too happy?’’ **Eurobarometer** ‘‘On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?’’ **UK Labour Force Survey** sum of "Have you recently: 1. Lost much sleep over worry? 2. Felt constantly under strain? 3. Felt you could not overcome your difficulties? 4. Been feeling unhappy and depressed? 5. Been losing confidence in yourself? 6. Been thinking of yourself as a worthless person?" 0, 1, 2, 3 - depending whether each was answered not at all, no more than usual, rather more than usual,much more than usual." **WVS** "All things considered, how | 20 - 85+ (top range not explicitly reported), men and women are examined separately |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | satisfied are you with your life as a whole these days?'' A. 1 'Dissatisfied' to 10 'Satisfied'" and **Asianbarometer** ''All things considered, would you say that you are happy these days? 1 = very unhappy; 2 = not too happy; 3 = neither happy or unhappy; 4 = pretty happy and 5= very happy'' and **Latinobarometer**: ''On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?'' | |
| **Blanchflower and Oswald 2011** | Literature Review and analysis of data from US General Social Surveys, Eurobarometer 2010, Behavioral Response Factor Surveillance System (BRFSS), European Quality of Life Survey (2007), World Values Survey, International Social Science Survey (ISSP) | CS | Yes | **U shaped** | **USGSS** ''Taken all together, how would you say things are these days e would you say that you are very happy, pretty happy, or not too happy?'' **Eurobarometer** ''On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?'' **BRFSS** "In general, how satisfied are you with your life?" Here people are able to answer one of the following: Very Satisfied, Satisfied, Dissatisfied, or Very Dissatisfied. "Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good? **European QOL**: Q1. All things considered, how satisfied would you say you are with your life these days? Please tell me on a scale of 1 to 10, where 1 means very dissatisfied and 10 means very satisfied. Q2. Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy **WVS**: "All | ages 18-90 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | things considered, how satisfied are you with your life as a whole these days?'' A. 1 'Dissatisfied' to 10 'Satisfied'" **ISSP** "If you were to consider your life in general these days, how happy or unhappy would you say you are, on the whole? [4] Very happy; [3] Fairly happy; [2] Not very happy; [1] Not at all happy." | |
| **Carmel, Shrira and Shmotkin 2013** | Elderly Israelis | CS | Yes | **linear - declining** | **Willingness to live**: "If you could describe your will to live on a scale from 0 to 5, would you say that it is: 5 very strong, 4 strong, 3 intermediate, 2 weak, 1 very weak, and 0 no will to live." and **Life satisfaction**: six items asking the respondents to rate their satisfaction with their physical health, their ability to think and remember, their relationships with friends and relatives, the help they are giving to others, and with life in general. Ratings were given on a scale ranging from 1 (not at all satisfied) to 5 (very satisfied). Life satisfaction score was the items' mean rating. | 70-90+ |
| **Clark 2007** | British Household Panel Survey | L | Yes | **U shaped** when controlling for cohort | **GHQ-12** (see Goldberg, 1972) reflects overall mental well-being. It is constructed from the responses to twelve questions. Q1: Have you recently been able to concentrate on whatever you're doing ? 1 (Better than usual) - 4 (Much less than usual). Q2-Q7: Have you recently (lost much sleep over worry/felt constantly under strain/felt you couldn't overcome your difficulties/been feeling unhappy or depressed/been losing confidence in yourself/been thinking of yourself as a worthless person? 1(not at all) - 4 (much more than usual). Q8 - | 16-64 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | Q12: Have you recently (felt that you were playing a useful part in things/felt capable about making decisions about things/been able to enjoy your normal day-to-day activities/been able to faceup to problems/been feeling reasonably happy, all things considered? 1 (more so than usual) - 4 (much less than usual). | |
| **Clark and Oswald 1994 and 2006** | British Household Panel Survey and General Health Questionnaire | L | Yes | **U shaped** | **BHPS** "How dissatisfied or satisfied are you with your life overall?" Responses are measured on a 7-point scale ranging from 1 (not satisfied at all) to 7 (completely satisfied). **GHQ-12** (see Goldberg, 1972) reflects overall mental well-being. It is constructed from the responses to twelve questions. Q1: Have you recently been able to concentrate on whatever you're doing ? 1 (Better than usual) - 4 (Much less than usual). Q2-Q7: Have you recently (lost much sleep over worry/felt constantly under strain/felt you couldn't overcome your difficulties/been feeling unhappy or depressed/been losing confidence in yourself/been thinking of yourself as a worthless person? 1(not at all) - 4 (much more than usual). Q8 - Q12: Have you recently (felt that you were playing a useful part in things/felt capable about making decisions about things/been able to enjoy your normal day-to-day activities/been able to faceup to problems/been feeling reasonably happy, all things considered? 1 (more so than usual) - 4 (much less than usual). | ages 16-69 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Costa et al. 1987** | National Health and Nutrition Examination Survey | L | Yes | **flat** | **NHNES**: 1 Have you been under or felt you were under any strain, stress or pressure during the past month? 2 Have you been anxious, worried, or upset during the past month? 3 Have you been feeling emotionally stable and sure of yourself, during the past month? 4 How relaxed or tense have you been during the past month? 5 How depressed or cheerful have you been, during the past month? 6 How have you been feeling in general during the past month? 7 How happy, satisfied or pleased have you been with your personal life, during the past month? 8 How much energy, pep, vitality have you felt, during the past month? Rating: 0-5 scale with verbally labeled response options Computation: (3+6+7+8) - (1+2+4+5) | 25-85 |
| **Deaton 2008** | 2006 World Values Survey | CS | No | **U-shaped** only within English speaking countries, differs in other countries | **Life Satisfaction**: "Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time? at the present moment" from 0("the worst possible life") to 10 ("the best possible life") and **Health Satisfaction**: ("are you satisfied or dissatisfied with your personal health?" yes or no. | 15-98 |
| **Easterlin 2001** | US General Social Surveys | L | No | **flat** | **USGSS**: "Taken all together, how would you say things are these days? Would you say that you are?" 3 very happy; 2 pretty happy; 1 not too happy | 18-78 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Easterlin 2006** | US General Social Surveys | L | Yes | **inverted U** | **USGSS**: "Taken all together, how would you say things are these days? Would you say that you are?" 3 very happy; 2 pretty happy; 1 not too happy | 18-89 |
| **Easterlin and Sawangfa 2007** | US General Social Surveys | L | Yes | **inverted U** for happiness, varying effects for satisfaction with various domains of life (finances, family, health, work) | **USGSS**: "Taken all together, how would you say things are these days? Would you say that you are?" 3 very happy; 2 pretty happy; 1 not too happy | 18-89 |
| **Frey and Stutzer 2002** | Literature review | | | **U shaped** | Literature review | |
| **Frijters and Beatton 2012** | German Socio-Economic Panel, British Household Panel Survey, Household Income Labour Dynamics Australie | L | Yes | **U-shaped/cubic** U shaped from 20-60 with raw data, controlling for fixed-effects leads to stable happiness from 20-50 with increasing happiness at 60 then decline after 75 | **GSOEP**: ""Taking all things together, how satisfied are you with your life these days? Please answer with the help of this scale. For instance, when you are totally satisfied with your life, please tick '10'. When you are totally unsatisfied with your life, please tick '0'. You may use all values in between to indicate that you are neither totally satisfied nor totally unsatisfied." 10 totally satisfied - 0 totally unsatisfied" **BHPS**: "Which number best describes how satisfied or dissatisfied you are with your life as a whole?" 1-7, **HILDA**: "All things considered', how satisfied are you with your life?" 0-10 | 18-90 |
| **Gerdtham and Johannesson 2001** | Swedish Level of Living Survey | CS | Yes | **U shaped** | **LNU**: "The daily life is never a source of personal satisfaction, The daily life is sometimes a source of personal satisfaction, The daily life is a source of personal satisfaction most of the time" | 18-76 |

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| **Gwozdz and Sousa-Poza 2010** | German Socio-Economic Panel 1994-2006 | L | Yes | **cubic/U shaped** followed by strong decline among the very oldest. U shape disappears when using fixed-effects estimation | **GSOEP**: "Taking all things together, how satisfied are you with your life these days? Please answer with the help of this scale. For instance, when you are totally satisfied with your life, please tick '10'. When you are totally unsatisfied with your life, please tick '0'. You may use all values in between to indicate that you are neither totally satisfied nor totally unsatisfied." 10 totally satisfied - 0 totally unsatisfied" | 16-94 |
| **Hayo and Seifert 2003** | Paul-Lazarsfeld Society Surveys of Bulgaria, Czech Republic, Slovak Republic, Hungary, Poland, Romania, Slovenia, Croatia, Belarus, Ukraine | CS | Yes | **U shaped** | **Economic Well-Being** "All in all, how do you rate the economic situation of your family today" and **Life Satisfaction** "On the whole, are you very satisfied, not very satisfied, or not at all satisfied with the life you lead?" | 18-77 |
| **Kassenboehmer and Haisken-DeNew 2012** | German Socio-Economic Panel 1994-2006 | L | Yes | **flat** U shape disappears when controlling for fixed effects and respondent experience in the panel | **GSOEP**: "Taking all things together, how satisfied are you with your life these days? Please answer with the help of this scale. For instance, when you are totally satisfied with your life, please tick '10'. When you are totally unsatisfied with your life, please tick '0'. You may use all values in between to indicate that you are neither totally satisfied nor totally unsatisfied." 10 totally satisfied - 0 totally unsatisfied" | 20-64 |
| **Koralewicz Zagorski 2014** | Probability Sample in Poland | CS | No | **linear - declining** | **Life Satisfaction**: Are you generally satisfied with your life as a whole? 1 (very dissatisfied) - 5 (very satisfied) and **Psychological Well-Being**: index of how often people felt a range of emotions (nervousness/discouragement, boredom/lack of control over own life/helplessness/unhappiness/rage/satisfaction, as things went well/certainty that all is | 18-84 |

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| | | | | | well/pride in accomplishment/curiosity) each rated from 0 (never) - 5 (very frequent) | |
| **McAdams et al. 2012** | British Household Panel Survey | L | No | **cubic – varying** patterns of satisfaction across different domains of life, Cubic for both aggregated domains and general life-satisfaction | **BHPS: Life satisfaction**: "How dissatisfied or satisfied are you with your life overall?" 1 (—not satisfied at all) to 7 (—completely satisfied). **Eight Domain Satisfaction Questions** asked "How dissatisfied or satisfied are you with...(your health/ the income ofyour household/ your house or flat/ your spouse or partner/ your job/ your social life/ your amount of leisure time / your use of leisure time?" 1 (—not satisfied at all) to 7 (—completely satisfied). | 16-93, working and in a committed relationship |
| **Mroczek and Spiro 2005** | Veteran Affairs Normative Aging Study | L | Yes | **cubic** inverted U with satisfaction sharply decreasing one year prior to death | **Liang (1984) Life Satisfaction Inventory Form A**, 1 "As I grow older, things seem better than I thought they would.", 2 "I have gotten more of the breaks in life than most people I know.", 3 "This is the dreariest time of my life.", 4 "I am just as happy as I was when I was younger.", 5 "My life could be happier than it is now.", 6 "These are the best years of my life.", 7 "Most things I do are boring and monotonous.", 8 "I expect some interesting and pleasant things to happen to me in the future.", 9 "The things I do are as interesting to me as they ever were.", 10 "I feel old and somewhat tired.", 11 "I feel my age, but it does not bother me." Agree or disagree, sum and total scores range from 0-11 | 33-92, males, with less than 1% under 40 or over 85 |
| **Myers and Diener 1996** | Literature review | | | **flat** | Literature review | |
| **Powdthavee 2005** | South Africa OHS | | Yes | **U shaped** | **OHS**: “Taking everything into account, how satisfied is this household with | 15-65 |

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| | | | | | the way it lives these days?" 1 (very dissatisfied) - 5 (very satisfied) | |
| **Stone et al. 2010** | Gallup Poll 2008 | CS | Yes | **U shaped/ cubic/ varying** global well-being, mild cubic (U-shaped with decline at very end) for happiness and enjoyment, varying effects on negative hedonic well-being (stress, anger, worry, sadness) | **Global Well-Being**: "Please imagine a ladder with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you, and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?" **Hedonic Well-Being** measured with yes/no responses to the following question "Did you experience the following feelings during A LOT OF THE DAY yesterday? How about _____?" where each affect (positive affect adjectives: Enjoyment, Happiness; negative affect adjectives: Stress, Worry, Anger, Sadness) was answered separately. | 18-85 |
| **Stutzer and Frey 2006** | German Socio-Economic Panel 1984-2000 | L | Yes | **U shaped** | **GSOEP**: "Taking all things together, how satisfied are you with your life these days? Please answer with the help of this scale. For instance, when you are totally satisfied with your life, please tick '10'. When you are totally unsatisfied with your life, please tick '0'. You may use all values in between to indicate that you are neither totally satisfied nor totally unsatisfied." 10 totally satisfied - 0 totally unsatisfied | range not explicitly reported; figure displays 20-60 but the GSOEP panel data includes responses from ages raning from 17-85 |

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| **Van Landeghem 2012** | German Socio-Economic Panel 1985-2007 | L | Yes | **U shaped/ flat** U shape vanishes when controlling for individual fixed effects | **GSOEP**: "Taking all things together, how satisfied are you with your life these days? Please answer with the help of this scale. For instance, when you are totally satisfied with your life, please tick '10'. When you are totally unsatisfied with your life, please tick '0'. You may use all values in between to indicate that you are neither totally satisfied nor totally unsatisfied." 10 totally satisfied - 0 totally unsatisfied" | 17-85 |
| **Winkelmann and Winkelmann 1998** | German Socio-Economic Panel 1984-1989 | | Yes | **linear - declining** | **GSOEP**: "How satisfied are you at present with your life as a whole?" 0 ("completely dissatisfied") - 10 ("completely satisfied") | 20-64, males |
| **Wunder, Wiencierz, Schwarze, and Kuchenoff 2013** | British Household Panel Survey and German Socio-Economic Panel Study | L | Yes | **cubic** U-shaped followed by strong decline in old age. Varying effect for individual domains | **BHPS**: "How dissatisfied or satisfied are you with your life overall?" Responses are measured on a 7-point scale ranging from 1 (not satisfied at all) to 7 (completely satisfied)." and SOEP "How satisfied are you with your life, all things considered?" The response is measured on an 11-point scale ranging from 0 (completely dissatisfied) to 10 (completely satisfied)." | 18-80 |

# Appendix 3 – Essay 1 Age Distribution

The sampling brackets used in Essay 1 were intended to ensure a sufficient range of ages of participants, however, this sampling strategy did not ensure a uniform distribution of ages. While Essay 1 results are presented across the entire range of ages from 18-100, results for participants over 80 years of age should be interpreted with extreme caution because of the small sample of older participants (only 16 participants were over 80 years old, see histogram below).

**Figure A3. Essay 1, Study 1, Histogram of Participants' Ages**