Well-Being in its Natural Habitat:

Orientations to Happiness and the Experience of Everyday Activities

A thesis submitted in partial fulfilment of the requirements for the Degree of

Master of Science in Psychology

At the University of Canterbury

By

Carsten J. Grimm

University of Canterbury

2013

Acknowledgements

"My friends are my estate."

– Emily Dickenson

My sincerest thanks to everyone who has offered me support, guidance, insight, counselling, encouragement, direction, and baking on this thesis journey—I have appreciated every gesture great and small.

Acknowledgement and thanks go to my supervisors. To my primary supervisor Professor Simon Kemp; what a wonderful supervisor you have been I can hardly express. Thank you.

To my secondary supervisor Professor Paul Jose at Victoria University Wellington; my sincerest thanks for your statistical advice, for many great chats, and for your guidance.

To Dr. Tamlin Conner at the University of Otago; my gratitude for your invaluable multi-level modelling assistance and for your general support.

To the Four Horsemen; any life event is navigable with you guys at my back. To my uncle Richard; perhaps if I had a little more of your intuitive wisdom I could forgo writing theses. I also acknowledge the tireless support of Susan Grimm, my mum. You taught me courage. Here is yet another fruit of your formative counsel.

And finally, thanks to the behavioural coding team and all of UC Psychology's Elite for your endless camaraderie. A thesis journey without everyday support such as yours must be intolerable.

Contents

List of Tables

List of Figures

Dedicated to Ron.

Abstract

Peterson, Park, and Seligman (2005) have proposed that individuals seek to increase their well-being through three behavioural orientations; via pleasure, meaning, and engagement. The current study investigated how orientations to happiness influenced the pursuit and experience of daily activities using an experience sampling methodology (ESM). Daily activities were experienced as a blend of both hedonic and eudaimonic characteristics. Dominant orientation to happiness did not predict engaging in different daily activities. Trait orientations to happiness had some influence on the momentary experience of behaviour. Those scoring highest on all three orientations to happiness also rated their daily activities highest on momentary pleasure, meaning, engagement, and happiness. The results suggest that increasing all three orientations is a pathway to the full life and a balanced well-being portfolio.

Chapter 1: Introduction

> "What do you like doing best in the world, Pooh?" asked
> Christopher Robin.
>
> "What I like best in the whole world is Me and Piglet going to see
> You and you saying 'What about a little something?' and Me saying,
> 'Well, I shouldn't mind a little something, should you, Piglet?' and
> it being a hummy sort of day outside, and birds singing."
>
> - A.A. Milne, *The House at Pooh Corner*

This thesis is derived from research and theory associated with the positive psychology 'movement' (Mary, 2010). This movement is sometimes described as a new name for an old idea (Tilson, 2006) in that positive psychology is simply the latest iteration of a long historical lineage of interest in what makes for a good life. Positive psychology posits that people have as a central tendency the desire to become happier. This tendency, while simply stated, is complex, and conventionally accepted pathways to achieving happiness can be easily misguided. Greater sophistication is therefore required in order to interpret this relatively 'simple' aspiration.

Much discussion on the characteristics of happiness has occurred over recent years of scholarship. What has become clear is a seeming reluctance to admit complexity when dealing with happiness. Researchers now agree there are two fundamentally different ways to think about happiness: Being happy as one *experiences* life; and being happy when one *considers* one's life (Kahneman, 2010). Bradburn was the first to empirically demonstrate that positive affect and negative affect are relatively independent of one another (Bradburn, 1969; Ryff, 1989). The relative frequencies of positive and negative emotions are two of the key components of experienced well-being. Happiness, therefore, is considered to be an affective term to describe positive emotional states (Ryff, 1989). Life satisfaction, on the other hand, is a cognitive judgment made when evaluating the conditions of one's life (Diener, Emmons, Larsen, & Griffin, 1985). The relative frequencies of positive and negative emotion in

addition to life satisfaction are the commonly understood constituent parts of subjective well-being (SWB).

The introduction to this thesis initially examines the characteristics and recent history of positive psychology in order to address the current climate and culture of happiness research. Growing from within positive psychology research are several well-being theories which form the basis of the current investigation. The orientations which we are presumed to have towards seeking well-being and happiness are reviewed as the main area under examination in this study. These orientations to happiness are important for our understanding of what makes for a 'full life' and this research aims to contribute to that understanding.

The Rise of Positive Psychology

It has been suggested that psychology since the end of the Second World War has lost its way. Before World War II, mainstream psychology attempted to alleviate mental distress and disorder, work with the 'worried well' to improve their lives, and study genius and the talented (Seligman, Parks, & Steen, 2004). Although the topic is of central importance and concern to most individuals, psychology had all but ignored the study of happiness until relatively recently (Diener, 1984). This was possibly due to the obvious distress of returned servicemen following the Second World War and the availability of funding to support research and careers associated with psychopathology (Hefferon & Boniwell, 2011; Seligman et al., 2004).

The current positive psychology movement arose out of Martin Seligman's term as President of the APA commencing in 1998. Seligman and Csikszentmihalyi (2000) presented an introductory paper on positive psychology in the special millennial issue of the *American Psychologist* which identified the intention of positive psychology to restore a 'sense of balance' to what was felt to be an overly negatively focused discipline. Seligman has remained the most identifiable figurehead of the movement since (Hefferon & Boniwell, 2011).

However, Seligman was not the first to use the term 'positive psychology'. Maslow is often credited for its initial use in *Motivation and Personality* (1954) where he presciently articulates the theme that would emerge at the turn of the century:

"The science of psychology has been far more successful on the negative than on the positive side; it has revealed to us much about man's shortcomings, his illnesses, his sins, but little about his potentialities, his virtues, his achievable aspirations, or his psychological height" (p. 201).

Central to the modern focus of positive psychology is the idea that "happiness is a condition over and above the absence of unhappiness" (Seligman et al., 2004, p. 1379). The complaint levelled at traditional psychology of the last half century is that it has implicitly assumed that alleviating misery is equivalent to making people happier. This is fundamentally disputed by the strongest advocates of happiness research, notably Seligman and the University of Pennsylvania 'school' of positive psychologists (notably UPenn was the first institution to offer a Masters in Applied Positive Psychology; other institutions are following suit, including the University of East London and the University of Aarhus).

Positive psychology is necessarily based on earlier work by researchers who would not have identified themselves as positive psychologists. It is also necessarily and obviously founded on the humanists of the 1950s and 1960s, and earlier psychologists, notably Abraham Maslow, Gordon Allport, Carl Jung, and Carl Rogers (Ryff, 1989). Indeed, positive psychology has been called the "rebirth of humanistic psychology" (Funder, 2010, p. 499). A point of difference, however, between the humanist and positive psychology movements is claimed to be a more scientific orientation towards empiricism within the field of positive psychology (Hefferon & Boniwell, 2011; Seligman & Csikszentmihalyi, 2000). The Humanists were less reliant on empiricism to support their theorising about the essential goodness of man (Peterson & Seligman, 2004). This has perhaps caused an overswing in the direction of overly favouring quantitative over qualitative data within positive psychology, which the earlier field of humanism was more apt to embrace (Hefferon & Boniwell, 2011).

The Hedonic and Eudaimonic Traditions

Are there different ways to be happy? This question has been debated and deeply considered since ancient times and today's psychological theories on happiness can be traced to the founding western thinkers of ancient Greece. Recent scientific

literature on what makes for a good life conceptualises two 'types' of happiness rooted in the ancient Greek philosophical concepts of *hedonia* and *eudaimonia*. Waterman (1993) was one of the first modern psychology theorists to draw attention to this distinction in the happiness literature and since then the concept has received increasing attention.

Hedonia is typically described as the pursuit of pleasure for its own sake. A common understanding of hedonism is the maximising of physical pleasure and the minimising of pain (Steger, Kashdan, & Oishi, 2008). This philosophy is typically ascribed to Aristupus (435–356 BCE), a student of Socrates and a member of the Cyrenaic school of hedonism. This brand of hedonism advocated for the experience of pleasure as the only good in itself. A variant of this philosophy, known as ethical hedonism, while being for sensual pleasure, is against pleasure at the expense of others. This was later advanced and refined by Epicurus (341–270 BCE) who emphasised simple pleasure as a means to obtain tranquillity. Accordingly, he advocated for a life of restraint which particularly included the pursuit of knowledge and friendships. Epicurus's original view is at odds with the modern day understanding of Epicureanism and hedonism which has come to be synonymous with gross indulgence and materialism (De Botton, 2001).

There has been increasing convergence in the modern literature of eastern and western concepts of the highest of human ideals. Eudaimonia is an Aristotelian philosophical term for what makes life worth living. Aristotle (384–322 BCE) was against the pursuit of sensory pleasure in isolation, and rather advocated the concept of *arête*, often translated as virtue or excellence. It has been noted that the concept of arête is very closely aligned with the translation of the Sanskrit ideal *dharma* from the ancient Hindu tradition (Pirsig, 1974). Banth and Talwar (2010) identified the overlap in eastern and western thinking between Csikszentmihalyi's conceptualisation of *flow* and the idea of *jiva* from the Indian yogic tradition. The Sanskrit term *Anasakti* as described in the *Bhagavad Gita* has also been empirically linked to SWB, psychological well-being, and orientations to happiness (Banth & Talwar, 2012). In modern psychology, eudaimonic happiness is most commonly related to psychological growth, 'flourishing', and meaning in life (Ryan & Deci, 2001). Modern thinking on happiness therefore has a far reaching historical pedigree, with many convergent similarities to ancient wisdom teachings.

The Experience of Daily Activities

Experienced utility is the moment to moment experience of life as it is being lived. The concept was popularised by the work of Nobel laureate psychologist Daniel Kahneman, who draws the distinction in the psychological literature between experienced utility and decision utility, sometimes referred to as remembered utility (Kahneman, 2011). Experienced utility is closely aligned with Francis Edgeworth's concept of the 'hedonimeter', where each moment-to-moment experience of pleasure is able to be evaluated and displayed on a fictional instrument. Edgeworth –inspired by the psychophysics of his day—suggested that the sum happiness of an episode could be measured by the area under the curve between two periods as captured by the ebbs and flows of a hedonimeter in much the same way physiological recordings display peaks and troughs of bodily activity (Edgeworth, 1881; Colander, 2007).

Remembered experience has been shown to be a poor correlate of actual experience. In what has become the seminal work on the differences between these concepts—'the cold hand experiment'— Kahneman, Fredrickson, Schreiber, and Redelmeier (1993) demonstrated that experienced utility is particularly susceptible to being remembered in distorted ways. In their experiment, Kahneman et al. had participants conduct two trials in which they were asked to immerse one hand in painfully cold water. The first trial lasted for 60 seconds; the second trial was identical to the first except that it was extended by a further 30 seconds during which the water was gradually warmed by one degree—still painfully cold, but slightly less so that during the first episode. When given the choice which trial to repeat, 69% of participants said they would prefer to repeat the second trial—despite this experience having a longer exposure to pain than in the shorter trial. What this experiment and many others like it show, is the influence of the *peak-end rule* on decision utility when applied to remembered experience. Because the longer immersion trial was less painful at its conclusion it was remembered more favourably causing more participants to prefer to repeat that experience than the shorter, more rational choice. The experienced utility of life as it is actually lived is not always how it is represented during decision-making.

Global assessments of life satisfaction have similarly been shown to be sensitive to local effects of mood and circumstance. For example, in one experiment, participants' life satisfaction ratings were shown to be positively influenced by

finding a dime on a photocopier that was planted there by an experimenter. In another experiment—an otherwise unrelated measure to life satisfaction such as the number of dates participants had been on in the previous month—was made to correlate highly with life satisfaction simply by making the dating question precede the life satisfaction question—a phenomenon known as priming (Schwarz & Strack, 1999; Strack, Martin, & Schwarz, 1988). Given this sensitivity-to-confounding of many of the constructs that psychologists are interested in studying, it is important to go about the measurement of psychological variables in a way that will provide for the most valid results possible.

Measuring Daily Activities: Experience Sampling Methodology

Recent critiques of psychological research—and social psychological and personality research in particular—have highlighted the need to investigate what people do (i.e. behaviour) rather than what they say they do (Baumeister, Vohs, & Funder, 2007). Actual behaviour and hypothetical behaviour have long been shown to be divergent in reality (e.g. West & Brown, 1975). This underscores the need for research into what *actual* behaviours contribute to living well (Park & Peterson, 2009). Given the unreliability of relying on memory to measure actual experience, researchers have increasingly turned to techniques which resemble Edgeworth's hedonimeter.

The experience sampling methodology (ESM) asks participants to frequently report their momentary experience when prompted, often via an electronic beeper or cellular phone. This technique is often credited to Csikszentmihalyi and has the advantage of providing for immediate responses in the real world—characteristics that contribute to a high *ecological validity* (Atz, 2012; Csikszentmihalyi, Larson, & Prescott, 1977; Scollon, Kim, Prieto, & Diener, 2003). This methodology allows for the recording of direct experience, without the biases and distortions that relying on decision utility and memory typically exhibit.

Compared to the earliest experiments using ESM, people are now much more used to carrying around electronic devices (such as cellular phones) and researchers are making good use of this by using cellular phones as platforms for ESM research (Atz, 2013). Indeed, some commentators have proposed that cellular phones will one day completely revolutionise the way that psychology conducts research (Miller, 2012).

The methodology adopted in the current study employs ESM using text-messaging to investigate the well-being associated with everyday behaviours.

Person-Activity Fit

Of all the factors impacting on the variance in a person's happiness, researchers now believe that up to 40 percent is the result of intentional activity (Lyubomirsky, Sheldon, & Schkade, 2005). Half of one's happiness is believed to be linked to one's genetic disposition and only ten percent is believed to be due to actual life circumstances (Lyubomirsky et al., 2005). This underscores the importance of getting the most effect and positive impact mileage out of activities that are under one's volition. According to the person-activity fit hypothesis, not every behaviour or clinical intervention will have equal success at raising happiness levels. Lyubomirsky et al. (2005) posit that the success of a particular behavioural activity to increase happiness depends on its tailoring to the individual's composition of characteristics. Therefore, interventions should be tailored to 'fit' the unique shape of the person in order to provide for a good 'match' (Giannopoulos & Vella-Brodrick, 2011, p. 97).

Oishi, Diener, Suh, and Lucas (1999) investigated the role of values in moderating the relationship between activities and well-being in a diary study. Similar to the person-activity fit hypothesis, the authors' value-as-moderator model predicted that pursuing activities which were aligned with individual values would be more satisfying than activities that were not aligned with individual values. The investigators found that daily activities did indeed influence daily well-being to the extent that those activities were aligned with an individual's values. The findings of Oishi et al (1999) emphasise the need for more research into how SWB operates at the daily level in order to inform how one might achieve a good 'person-activity fit'.

Hedonic and Eudaimonic Behaviours

Researchers have endeavoured to identify specific behaviours that contribute to eudaimonic and hedonic well-being. It has been thought that in order to manifest a particular variety of happiness there are specific activities and behaviours that can be pursued (Steger et al., 2008), for example persevering at thesis writing in order to cultivate meaning in life. Steger, Kashdan, and Oishi (2008) investigated the individual contributions of eudaimonic and hedonic behaviours to well-being and

positive affect in a diary study. The authors created a list of behaviours they classified as either completely representative of hedonic well-being (e.g. getting drunk) or as completely representative of eudaimonic well-being (e.g. giving money to a person in need) and investigated their relative contributions to daily well-being.

Results indicated that eudaimonic behaviours were more consistently related to greater life satisfaction and positive affect than hedonic behaviours. However, the authors also conceded that the daily experience of life is unlikely to be either completely eudaimonic or entirely hedonic in nature—it is much more likely to consist of "blended activities" (Steger et al., 2008, p. 39). The authors anticipated that those who are able to extract meaning from their daily activities as well as fun and enjoyment were most likely to be those who experienced the highest well-being overall.

As the research by Steger et al. (2008) demonstrates, much contemporary writing on happiness in the psychological literature has endeavoured to make a neat distinction between a hedonic focus on pleasure and a broader theory of eudaimonia relating to psychological well-being (e.g. Ryan & Deci, 2001; Steger et al., 2008). The field is subsequently awash in articles that discuss the merits of distinguishing hedonia from eudaimonia and attempt to reconcile a scientific way forward (e.g. Biswas-Diener, Kashdan, & King, 2009; Kashdan, Biswas-Diener, & King, 2008; Waterman, 2008). As articulated by Biswas-Diener, Kashdan, and King (2009) "there remain serious problems in the translation of eudaimonia from philosophy to psychology" (p. 209). Nevertheless, the influence of hedonic and eudaimonic thinking can be seen in many areas of positive psychology, and this is clearly evident in Peterson, Park, and Seligman's (2005) Orientations to Happiness theory.

Orientations to Happiness Theory

Peterson, Park, and Seligman first proposed their Orientations to Happiness theory in 2005 and several lines of independent research enquiry have ensued. Encapsulated in the name of the theory is the idea that people have a particular preference for achieving happiness via three discrete 'orientations'. The authors state their expectation that these orientations determine the pursuit of different activities; "we assume that given orientations shape conduct" (p. 37). Elsewhere this sentiment

has been expressed as a "tendency to rely on one rather than another" orientation to happiness (Seligman et al., 2004).

The first route to seeking happiness is hedonic, namely via *pleasure*, and primarily includes the experience of positive emotion. The second route is eudaimonic, via *meaning*, and includes pursuing activities in the contribution and connection to something larger than oneself that provides a sense of purpose. The significant advance on traditional thinking in this area has been to argue for a third orientation to seeking happiness, called *engagement*. Engagement is the term given to conceptualise the psychological experience of flow states as put forward by Csikszentmihalyi from his work during the 1970s (e.g. Csikszentmihalyi, 1975).

Engagement

The idea of flow and of engagement has an early conceptual lineage in Maslow's work on self-actualisation and peak experiences (Csikszentmihalyi & Csikszentmihalyi, 1992; Maslow, 1968). Csikszentmihalyi describes how during his doctoral research he encountered artists who were so deeply focused on their work that time appeared to stop for them while they engaged in their present activity—seemingly for little or no extrinsic reward. From this work the term flow arose to describe the nature of deeply engaging activities. Important for the current orientation to happiness theory, during flow (referred to as engagement) there is not necessarily any subjective experience of pleasure or meaning; this may come after the experience, but the nature of engagement is all-encompassing of attention. It is therefore argued that engagement is neither entirely hedonic nor entirely eudaimonic in nature and therefore must lie in between as an 'amalgam' of these two states (Peterson et al., 2005; Waterman, 1993, p. 690).

Orientation to happiness researchers have named each tendency to primarily pursue one of the orientations to seeking happiness. An orientation to pleasure is called the 'the pleasant life'; an orientation to meaning is 'the meaningful life'; and an orientation to engagement is 'the good life' (sometimes called 'the engaged life'; Giannopoulos & Vella-Brodrick, 2011; Seligman et al., 2004; Vella-Brodrick, Park, & Peterson, 2009).

Scale Construction and the Full Life Hypothesis

The orientations to happiness scale (OTH; Peterson et al., 2005) was created via 36 face-valid items asking participants to agree with statements describing an orientation to pleasure, meaning, or engagement (12 items per sub-scale). From the results of an initial internet sample (N = 180) six items per sub-scale with highest item-total correlations were selected. Scale validation was conducted using scores from 845 internet users who took the subsequent revised 18-item questionnaire online via www.positivepsychology.org. Principal components analysis found three factors as expected with items loading cleanly on their respective constructs.

The authors examined relationships between OTH, life satisfaction (as measured by the Satisfaction with Life Scale; Diener et al., 1985), and demographic information collected from participants. All three OTH domains predicted life satisfaction over and above demographic variables, with an orientation to pleasure being the smallest and weakest (but still statistically significant) predictor (β = .11, p <.05). Of the demographic information collected, age was found to be inversely related to an orientation to pleasure, suggesting that younger respondents had higher endorsement of pleasure as a pathway to happiness.

The main discovery of this initial OTH research was that those who were simultaneously high on all three OTH also scored high on life satisfaction. This was found in a regression predicting life satisfaction where the three-way interaction term accounted for a small but significant amount of variance (ΔR^2 = .006, p < .05). Reciprocally, those scoring low on all three OTH dimensions had particularly low scores on life satisfaction. This pattern of responding was termed 'the Full Life' versus 'the Empty Life'. Higher endorsement of all three OTH was therefore suggested to be better for well-being—albeit demonstrated solely on the domain of life satisfaction at this early stage. Nevertheless the OTH scale and 'the Full Life hypothesis' have sparked considerable interest and subsequent research to which we now turn.

Psychometric Analysis of the Orientations to Happiness Scale

By far the most thorough investigation of the psychometric properties of the OTH scale has been conducted by Ruch, Harzer, Proyer, Park, and Peterson (2010) in several German-speaking samples. In addition to producing a German-language

translation of the OTH scale, the authors tested the psychometric loadings of the OTH domains in paper and pencil as well as internet samples, the convergent and discriminant validity of the OTH scale, as well as the scale's test-retest reliability over three and six months. All analyses were found to be largely encouraging.

Results indicated the OTH scale was reliable over both the three and six-month periods (rs all $\geq$ .63). Four factors were found in some of the factor analysis models. However, the small change in RMSEA from the three to the four-factor model, in addition to the scree plot, indicated that retention of the more parsimonious three-factor solution was preferable. This validated the original scale construction (i.e Peterson et al., 2005).

In another part of the investigation (with 127 psychology students) the authors compared the endorsement of the OTH domains with that of two peers. Self-reported ratings of the OTH domains were found to converge with peer-reports of the same OTH domains (mean convergent validity coefficient r = .50). Self and peer reports also converged significantly with non-matching domains (e.g. self-reported engagement correlated significantly with peer-rated meaning), however far less strongly than with the matching domains (all non-convergent correlations were r $\leq$ .26).

The authors also attempted to demonstrate convergent validity with behaviours by asking participants to rate how much time they would spend on imagined activities associated with the three OTH domains; pleasurable activities in a leisure context, engaging activities in a work context, and meaningful activities in a family context. These scores were then correlated to participants' OTH scores. Higher scores in pleasure were related to more self-reported time spent planning and pursuing of pleasure activities. The same patterns applied to the work-engagement and family-meaning scenarios. Finally, pleasure was again found to be inversely related to age, replicating the finding that younger adults tend to have a higher endorsement of 'the pleasant life' (or hedonism).

Orientations to Happiness and Character Strengths

Peterson, Ruch, Beermann, Park, and Seligman (2007) assessed the relationships between OTH, life satisfaction, and strengths of character in US (N = 12,439) and Swiss (N = 445) samples. Much work has been done in recent years to provide

empirical backing to the study of character strengths and virtues (McCullough & Snyder, 2000; Park, Peterson, & Seligman, 2006). Peterson and Seligman (2004) provided the first 'diagnostic manual' of character strengths and virtues in order to help legitimise the scientific study of strengths within (positive) psychology. This was intended to provide a balance to traditional psychopathology diagnostic criteria that psychology has relied on, as embodied in the DSM.

Peterson, Seligman and colleagues identified 24 "ubiquitously-recognised" character strengths classified under six broad headings; (a) wisdom and knowledge (creativity, curiosity, judgment, love of learning, perspective); (b) courage (bravery, honesty, perseverance, zest); (c) humanity (kindness, love, social intelligence); (d) justice (fairness, leadership, teamwork); (e) temperance (forgiveness, modesty, prudence, self-regulation); and (f) transcendence (appreciation of beauty, gratitude, hope, humour, religiousness/spirituality[1]) (Peterson et al., 2007, p. 149).

The character traits of zest, hope, love, and curiosity were most associated with life satisfaction and converged closely with the three OTH domains of pleasure, meaning, and engagement (based on Spearman rankings between character strengths and life satisfaction, and character strengths and each OTH domain). The character strength most associated with pleasure was humour. The character strength most associated with meaning was religiousness/spirituality. The strengths most associated with engagement included zest, curiosity, and perseverance (Peterson et al., 2007).

This research identified the character strengths most associated with the three OTH domains and established that those strengths most associated with high life satisfaction were largely also those strengths associated with pleasure, meaning, and engagement. Although the US sample had a higher aggregated orientation to meaning (*M* (*SD*): US = 3.58 (.93); Swiss = 2.99 (.76))—and religiousness/spirituality score (US = 3.60 (.89); Swiss = 3.16 (.85))—this did not translate into a higher mean life satisfaction score (US = 21.80 (7.50); Swiss = 25.70 (4.80)). This was interesting as meaning had previously been found to be most strongly related to life satisfaction. The fact that meaning was more highly related to life satisfaction in the US sample than the Swiss sample is the first evidence of cultural differences in how OTH domains and well-being are related.

---

[1] Religiousness is sometimes labelled 'spirituality' (Peterson & Seligman, 2004).

Orientations to Happiness around the World

Park, Peterson, and Ruch (2009) investigated aggregated OTH and life satisfaction scores of visitors to the Authentic Happiness website (www.authentichappiness.org) from 27 countries around the world. This website provides feedback to respondents on each scale that is completed and is free, allowing for a diverse multi-national sample. By far the largest sample was from the US (N = 18,030) and samples from other countries ranged from N = 20 (Finland) to 2048 (UK). Nations varied in their aggregated level of endorsement of each OTH domain. However, only omnibus F-ratio tests were reported with no follow-up contrasts provided to identify which differences between nations were actually significant.

Nevertheless, k-means cluster analysis found a three-cluster solution, with one group of five nations being similarly low on all three OTH, a second cluster of 13 nations (including New Zealand) being relatively high on scores of pleasure and engagement, and a third cluster of nations being relatively high on scores of meaning and engagement. Religiousness/ spirituality was (as per previous studies) found to have a strong correlation with an orientation to meaning at the level of national average scores (r = .59, p < .005).

The researchers examined the relationships between life satisfaction and each OTH domain using aggregated country averages. Pleasure was shown to be unrelated to life satisfaction at this level (r = .19, ns), while meaning (r = .40, p <.04) and engagement (r = .62, p < .001) both retained their relationships. Collapsed over all individual data points the results were similar with the notable exception that pleasure then displayed a significant relationship with life satisfaction (pleasure r(16986) = .20, p <.001; meaning r(17021) = .38, p < .001; engagement r(17021) = .36, p <.001).

One notable finding in this study was the absence of any particular nation that seemed to provide 'the Full Life' for its citizens (Park et al., 2009). Whether this is even possible as a national public policy objective was not discussed, only that perhaps sampling was possibly responsible. As is the case with all studies that rely exclusively on internet sampling, this study may have been biased by using only those who found their way to the Authentic Happiness website and completed the relevant online questionnaires. Nevertheless, the authors claim to have provided

further evidence of the cultural variation in OTH endorsement, as well as having replicated the relative inferiority of the orientation to pleasure's ability to influence life satisfaction when compared to meaning and engagement.

Orientations to Happiness and Personality Measures

Vella-Brodrick, Park, and Peterson (2009) extended previous research by examining the ability of OTH to predict positive affect, negative affect, and life satisfaction over and above the variance accounted for by Big Five personality dimensions. This was conducted in US (N = 12,622) and Australian (N = 322) samples.

Personality has previously been found to be a strong predictor of SWB. DeNeve and Cooper (1998) conducted a meta-analysis of 137 personality dimensions and their relationship to SWB. Of the Big Five, conscientiousness (r = .22) and neuroticism[2] (r = -.24) were the two dimensions most strongly related to life satisfaction. Extraversion (r = .20) and agreeableness (r = .17) were most strongly related to positive affect, and agreeableness (r = .13) and neuroticism (r = -.23) were most strongly related to negative affect. Openness to experience was the personality variable consistently least related to SWB. Across the studies included in their analysis, DeNeve and Cooper found personality to be a good predictor of life satisfaction and positive affect, with negative affect least well predicted by personality.

In a study investigating the relationships between values, personality and SWB, Haslam, Whelan, and Bastian (2009) found that Big Five mediated the pathways of values to SWB. The relationships between values and SWB were shown to be due the variance both share with personality traits. Associations between values and SWB were argued to be "indirect effects of more basic associations between traits and SWB" (p. 42). This study provides just one demonstration of the robustness of the associations between Big Five personality and SWB.

Perhaps unsurprisingly, Vella-Brodrick, Park, and Peterson did indeed find that personality predicted substantially more variance in SWB than did OTH (adjusted R^2 for models *without* personality versus models *with* personality in square brackets;

---

[2] Neuroticism is often used interchangeably as the reciprocal of emotional stability (DeNeve & Cooper, 1998). Emotional stability is the preferred term in this study.

life satisfaction 7.9% [19.9%], positive affect 26.5% [37.3%], negative affect; 5.7% [34.8%]; Vella-Brodrick et al., 2009, p. 175). Once the Big Five personality factors had all been controlled for, each OTH domain predicted only very small amounts of additional variance. For example, engagement was found to account for 1.8% of the additional variance in life satisfaction while pleasure and meaning did not predict life satisfaction at all once personality variables had been accounted for. Demographics, personality and OTH accounted for 37.3% of the variance in positive affect; however, of this variance, pleasure accounted for just 2%, meaning 1.4%, and engagement 2.6%. Pleasure and meaning were also found to account for variance in negative affect to a small extent (1.1% and 1.8% respectively). Unlike the study by Haslam, Whelan, and Bastian (2009), mediation analyses were not conducted.

Interestingly, both the beta-weights for pleasure and meaning predicting negative affect were positive, indicating that higher endorsement of pleasure and meaning was associated with more negative emotions. The authors speculate this was connected to the theorising put forward by Ryff and Singer (1998), that finding meaning in life can be associated with considerable hardship and mixed emotions, including at times profound negative emotions. This underscores an important point that not all negative emotion is unhealthy. Indeed, Wong (2011) has lamented positive psychology's seeming fixation with positive emotion and claims that overcoming significant negative emotion is an important pathway to developing character strength and resilience (p. 70).

The authors speculate that using the Positive and Negative Affect Schedule (PANAS) may have contributed to some of the relationship findings between well-being, personality and OTH. The PANAS includes very specific 'high activation descriptors' (e.g. being enthusiastic, alert, and attentive) and excludes many low activation descriptors (e.g. being calm, relaxed, and content) (Vella-Brodrick et al., 2009). Other emotion scales (e.g. Scale of Positive and Negative Experience; Diener et al., 2010) address these concerns; accordingly the SPANE was used rather than the PANAS in the current study.

Overall, this research demonstrated that OTH did predict variance in each of the three components of SWB—positive affect, negative affect, and life satisfaction. However, once personality was controlled for, OTH was found to be a small and inconsistent predictor of well-being. A noteworthy omission from this study was that

the authors did not investigate the actual relationships between Big Five and the OTH domains. This is therefore one of the exploratory aims of the current study.

Orientations to Happiness as an Intervention

Giannopoulos and Vella-Brodrick (2011) conducted an important and influential study combining research on positive psychology interventions (PPIs) and several prominent theories, including OTH theory and person-activity fit theory. Positive psychology has embraced research into interventions which aim not only to alleviate depressive symptoms (e.g. negative affect), but also to restore mental health and healthy psychological functioning (Keyes, 2002; Seligman, Steen, Park, & Peterson, 2005). Scholars who advocate strongly for PPIs point out that the thorough scientific methodology that has grown up around psychopathology intervention research is now also being similarly applied to testing the effectiveness of PPIs. This allows for solid empirical evidence of how positive psychology can make people happier and increase their well-being (Seligman et al., 2005).

Sin and Lyubomirsky (2009) conducted a meta-analysis of 51 studies that reported using a variety of PPIs on both depressed and non-depressed populations totalling 4,266 participants. The authors examined the effectiveness of PPIs compared to both no-treatment control groups and to treatment as usual groups. Positive psychology interventions were found to be more effective at raising levels of well-being than both the no-treatment and the treatment as usual comparison groups (mean effect size $r =$ .29). In addition, PPIs were found to effectively ameliorate depressive symptoms (mean effect size $r =$.31).

Participants ($N = 218$) in Australia were recruited to participate in a PPI based on the 'three good things' intervention by Seligman, Steen, Park, and Peterson (2005). The procedure required participants to write about three good things that happened in their day that were related to an OTH domain each day for a week. Participants were randomly assigned to write about one of five different topics; pleasure, meaning, engagement, a combination of all three OTH, daily events, or no intervention. Well-being was operationalised as pre-post intervention change scores on the Mental Health Continuum—Short Form (MHC-SF). This is a comprehensive array of positive psychometric tests synthesised by Keyes (2005) consisting of three items measuring what Keyes calls *emotional well-being* (positive affect and life

satisfaction), six items measuring *psychological well-being* (Ryff & Keyes, 1995; Ryff, 1989), and five items measuring *social well-being* (Keyes, 1998). Giannopoulos and Vella-Brodrick hypothesised that an individual's dominant OTH would influence the success of the positive interventions used in their study. Specifically it was predicted that the success of the intervention would be greatest for those who were assigned to the condition that matched their dominant OTH, in accordance with the person-activity fit hypothesis.

Well-being was shown to increase for all intervention group participants from pre-intervention to follow-up. However, the most important discovery from this research was that—contrary to the actual hypothesis—*participants benefitted least* when they were assigned to write about the same OTH domain in which they were already strong. The authors suggest this provides more support to the full-life hypothesis than the person-activity fit-hypothesis. One possible explanation was that those who had been encouraged to expand their OTH 'horizons' increased their well-being scores the most. Participants who were made to write about alternative orientations to those they already endorsed highly were by default more likely to consider orientations they might not have otherwise given their natural inclinations. The person-activity fit hypothesis would have predicted the greatest well-being increases to have occurred for those that were assigned to write about their strongest OTH domain—but this was not the case. This study raises the question for the first time whether people should pursue activities that align with their preferred OTH domain or seek to diversify their behavioural repertoire in order to achieve 'the full life'. In this respect this research provides a particularly notable advance on earlier work. The current study aims to take this investigation of the full life further by examining OTH endorsements and experience-sampling ratings of everyday behaviour.

OTH Dominance

One serious methodological issue with this research, however, concerns how dominant OTH was calculated. Tertile splits were used to identify high, medium, and low scorers on the three OTH domains. This, however, provides only a relative standing of OTH scores *within the sample of participants* and says nothing of an individual's difference in scoring between their highest and next-highest OTH domain. For example, participants who were relatively high scorers on several

domains may well have ended up in a 'high' tertile split group that was not their actual highest OTH score—and therefore not their dominant OTH. Additionally, research that proposes that dominant OTH is an important construct—and that it determines the 'type of life' a person conducts—has yet to identify a way to make clear what this dominance actually means. This issue is yet to be resolved within the writing on OTH and was one of the aims for exploration in the current study.

Hedonic and Eudaimonic Motives for Behaviour

Huta and Ryan (2009) conducted one of the most comprehensive explorations of the benefits and effects of hedonia and eudaimonia so far in the academic literature. Their work was a refinement of earlier OTH research, primarily focusing on identifying the benefits and correlates of pursuing hedonically orientated and eudaimonically orientated activities. The authors conducted a series of four studies in which they created several new scales and assessed hedonic and eudaimonic motives using experience sampling and a positive psychology intervention.

A new scale was developed to measure hedonia and eudaimonia seeking which correlated highly with the pleasure and meaning domains of the OTH questionnaire (rs ≥ .61). Well-being was defined as scores on a constellation of variables including the traditional SWB items of positive affect, negative affect, and life satisfaction. Additionally, the authors created new scales to assess participant self-report on carefreeness, meaning, elevating experience, and vitality.

Across the studies, hedonically motivated behaviour was found to be associated with greater carefreeness, positive affect, and less negative affect than eudaimonically motivated behaviour. However, eudaimonically motivated behaviour was associated with meaning and with elevating experience, while hedonically motivated behaviour was not found to have a relationship with meaning and only a weak relationship with elevating experience.

One of the four studies consisted of an intervention from which the authors were able to examine the effect of adding a daily 'dose' of either hedonic or eudaimonic activity. Adding hedonic activity to a life already high in eudaimonia was associated with increased positive affect and carefreeness, while adding eudaimonic activity to a life high in hedonia was associated with greater elevating experience. Adding eudaimonic activity was also found to be associated with a decrease in negative affect

at three-month follow-up, suggesting there may be some delayed or cumulative effect of eudaimonic activity. One of the key findings from this study therefore suggests that a benefit of hedonic activity is short-term emotional self-regulation, while eudaimonic activity provides delayed benefits, perhaps increasing capacity for meaning and elevated experiences over time.

Interestingly, within persons at a given moment, the hedonic and eudaimonic orientations were found to be negatively correlated (r = -.28). Additionally, during the intervention study, participants were found to have a decrease in the opposite orientation to the condition they were assigned to, for example those in the 'adding eudaimonic activity' condition reported experiencing less hedonia. This research is perhaps the first evidence that indicates that eudaimonia and hedonia are somewhat opposing motives *at a given point in time*. Highly hedonic orientations were however correlated with highly eudaimonic orientations across individuals (r = .46), suggesting that people who are able to live the full life have both orientations as traits. This is supported by the Giannopoulos and Vella-Brodrick (2011) study, where those who broadened their behavioural OTH repertoire had highest gains in well-being. It is perhaps the balance of the competing demands and requirements of hedonic and eudaimonic pursuits that needs to be managed in order to achieve the full life.

The authors speculate that a key function of hedonic activity is as a cognitive-emotional regulator, helping to restore a person's level of affect after disruption. In this way their theorising resembles Cummins' theory of Homeostatically Protected Mood (Cummins, 2009). This theory proposes that mood is actively (although unconsciously) managed to stay within a normal range of experience. Increasingly difficult demands can lead to homeostatic failure where the individual experiences an exhaustion of coping and resilience, leading to outcomes such as depression. Additionally, the authors speculate about their pattern of results and Fredrickson's (2001) broaden-and-build theory of positive emotions. Fredrickson articulates how positive emotions broaden a person's thought-action repertoire, thereby allowing for the accrual of new behaviours, new perspectives, and new skills to draw on in the future. The study by Huta and Ryan adds to this understanding by showing how hedonic activity perhaps provides the initial resources for an 'investment' into eudaimonic behaviour.

One methodological concern in this study which the authors fail to address is the reliance that was placed on participants being clear about what their motives were for their behaviour. Many researchers have long since abandoned any trust in participant introspection (Nisbett & Wilson, 1977; Wilson & Stone, 1985). As early as in 1977 Nisbett and Wilson described the limits of introspection into higher order cognitive processes and provided a clear warning about the dangers of relying on introspection as a data-source. Huta and Ryan fail almost entirely to address this difficulty giving it only a passing mention during their discussion. The current study therefore heeds the earlier warnings of Nisbett and Wilson and does not rely on participant-reported motives—instead self-reported activities and ratings of those activities on the OTH dimensions are used.

Orientations to Happiness Summary

An emerging picture of the OTH research to date is that all three domains have their virtues. The current understanding of the characteristics and correlates of each OTH domain is a significant advance on earlier positions that sought to advocate either a hedonic or an eudaimonic orientation as better or worse than the other (Biswas-Diener et al., 2009). Pleasure, meaning, and engagement have been shown to be distinguishable from one another and to contribute separately and additively to life satisfaction. Typically, pleasure is the least strong of the three domains in predicting life satisfaction, while meaning and engagement vary in their relative strength. Endorsement of the three OTH domains seems to change over the life-course, with older people endorsing a more eudaimonic orientation and younger people preferring a more hedonic orientation.

While, of the three OTH, pleasure is least related to life satisfaction, it does appear to be the OTH domain which is most easily influenced, at least in the short term. The research by Huta and Ryan (2009) perhaps paints the most complementary picture of the relative strengths of hedonic and eudaimonic activities, each contributing to different parts of well-being. A holistic approach to well-being then lies not in choosing one approach over the other, but through investing in a harmonious whole. This fits with empirical evidence supporting the full life hypothesis; those who are high on all three OTH domains consistently score high on well-being dimensions—however well-being is defined from study to study. The research by Giannopoulos

and Vella-Brodrick (2011) suggests that by broadening one's ability to seek happiness via more than one orientation one might be able to build toward the 'full life'.

Nevertheless, the discussion of OTH thus far has mostly been inclined to imply that only one orientation is of primary concern within people's lives. By virtue of the titles scholars have given an endorsement of each particular orientation (e.g. 'the pleasant life'; Seligman, 2002) and the way scholars select language to discuss the OTH categories (e.g. 'pursuing a life of engagement'; Ruch et al., 2010, p. 228) there is an implied exclusivity to the pursuit and impact of each OTH domain. Providing a strengthened position on earlier 'dominant OTH' theorising, Giannopoulos and Vella-Brodrick also claimed that "people reliably differ on the type of life they pursue" (2011, p. 96). Whether or not this is true depends on whether the types of activities that people pursue differ with differing OTH endorsements. This has yet to be reliably demonstrated.

So far the concept of 'dominant' OTH is yet to be explored and defined. To my thinking the magnitude of the difference between the endorsement of OTH domains is the critical determinant. This is yet to be investigated and reported and is therefore one of the aims of the current study. Additionally, as noted by several authors (e.g. Vella-Brodrick et al., 2009), the OTH questionnaire assesses the *endorsement* of behaviours, and not the *actual conduct* of behaviours themselves. This reliance on self-report and introspection is one of psychology's consistent flaws and the source of much criticism levelled against the science (Baumeister, Vohs, & Funder, 2007). Even the research by Ruch et al. (2010) used imaginary scenarios to provide support for convergent validity of the OTH questionnaire with behaviour. More attention to the study of actual behaviour is therefore required in psychology research in general and in OTH research in particular.

Aims of the Current Study

The study reported in this thesis was an investigation of OTH theory grounded in the actual behaviours of everyday experience. The research adopted an experience sampling methodology using cellular phone text messaging, asking participants to rate the activities they were currently engaged in on pleasure, meaning, engagement, and momentary happiness. There were several complementary aims in the current research, derived from the proceeding review of the OTH field and which follow from

Tukey's (1980) suggestion that science is in need of both exploratory and confirmatory research. Three aims were therefore exploratory, while two aims tested hypotheses associated with the OTH theory.

The first part of the study replicated and extended research conducted by Vella-Brodrick, Park, and Peterson (2009). The ability of OTH to predict variance in SWB over and above that accounted for by Big Five personality traits was therefore investigated. The first exploratory aim was to identify the relationships between the Big Five and OTH domains. It was anticipated that the OTH domains would each have significant correlations with several of the Big Five personality traits.

The second exploratory aim was to identify how daily activities were rated on the OTH domains of pleasure, meaning, and engagement. Aggregated ratings were used and momentary happiness was included as a fourth dependent variable. It was anticipated that using both hedonic and eudaimonic ratings of behaviour would reveal a pattern of responding consistent with the 'blended activities' concept put forward by Steger et al. (2008). This was an advance on previous scholarship as no other study had investigated the patterns of ratings of daily activities using the OTH domains as outcome criteria.

The third aim was to explore the concept of a 'dominant' OTH within individuals. This study therefore examined the distribution of difference scores between each person's highest scoring OTH domain and their next highest OTH domain.

As part of this enquiry, evidence was sought for the three 'types of lives' that OTH researchers have previously coined; 'the pleasant life', 'the meaningful life', and 'the good life' (Seligman et al., 2004). This formed the first formal hypothesis-testing of the study: It was hypothesised that OTH dominance in pleasure, meaning, and engagement would be associated with engaging in different activities, as demonstrated by significantly different frequencies of behaviour by dominant OTH group. This was called the 'type of life' hypothesis.

The second formal hypothesis of the study and the final aim sought to identify if the 'full life' hypothesis was supported at the level of daily experience. It was hypothesised that those who were above the median on all three OTH domains (i.e. those with 'the full life') would also rate daily activities higher on pleasure, meaning, engagement, and happiness.

Chapter 2: Method

Data was collected via three phases. An online questionnaire was sent to participants at time 1. This was followed by an experience sampling period over seven consecutive days. Following this, participants completed the same online questionnaire again at time 2. This study was approved by the University of Canterbury's Human Ethics Board, number HEC 2012/36. All data was gathered over May–September 2012.

Participants

Participants (N = 173) were a mix of undergraduate Psychology students who completed the study for partial course credit, students recruited on campus via flyer advertising, and participants recruited domestically within New Zealand via a Facebook page advertising the study (www.facebook.com/whatyoudoingstudy).

The age range was 17 − 58 (M = 23.0, SD = 7.5) and included 132 (76.3%) female and 41 (23.7%) male participants. One hundred and forty one participants (81.5%) identified themselves as New Zealand European, 12 (6.9%) identified themselves as Maori or Pacifica, 7 (4.0%) as Asian, and 13 (7.5%) identified themselves as other ethnicities. One hundred and twelve participants (64.7%) were in the lowest annual income bracket <$10,000, 40 (23.1%) were in the income bracket $10K-$29,999, 14 (8.1%) were in the income bracket $30K-$69,999, 3 (1.7%) were in the income bracket $70K-$99,999, and 4 (2.3%) were in the highest income bracket of ≥$100,000. One hundred and fifty four participants (89%) were located in Christchurch, 10 (5.8%) were in Wellington, 2 (1.2%) were in Auckland, and 7 (4.0%) were in other locations around New Zealand.

Procedure

All communication with participants was done online via email and using cellphone text-messaging; participants were not required to come into the lab at any stage. Information to participants referred to the research as the 'What You Doing Study'. The stated aim was to investigate how people used their time during the day. Participants other than those completing the study for course credit were remunerated by entering a draw to win NZD $250 (USD $205 in October 2012).

After making contact with the study email address (whatyoudoingstudy@gmail.com) participants were sent introductory information explaining the text-messaging procedure and definitions of each of the key dependent variables (pleasure, meaning, engagement, and happiness). A link was also included with instructions to complete the time 1 questionnaire. This collected demographics, well-being measures, and personality information via a University of Canterbury Qualtrics site. Completing the online questionnaire took between 15-20 minutes. By continuing with the online questionnaire participants gave their consent to participate in the research. A copy of the online questionnaire is shown in appendix A.

Following completion of the online survey, participants were instructed to signal their preparedness to proceed to the texting phase by sending a short text-message to the researcher. A test text-message was then sent from the data collection text-messaging software in the standard study format in order to confirm compatibility between the participant's phone and the software (around 1-2% of cellphone users had difficulty sending or receiving messages from online messaging software) and to confirm participant proficiency with the texting procedure. All data collection text-messages were scheduled and sent via one of three New Zealand online messaging providers; Message Media (www.message-media.co.nz), Texta HQ (www.textmarketing.co.nz), and EMsg (www.emsg.co.nz). All messages sent to participants during the study were identical (messaging providers were trialled for the experimenter's benefit).

Upon successful reply, participants were entered into the online messaging database and their 21 messages scheduled. A message was sent back advising the study would begin in the next few days (see Figure 1). Different participants commenced the study on different days of the week to minimise the influence of weekly cycles on the results (Moskowitz, Brown, Côté, & Moskowitz, 1997). If the initial reply was not in the standard reply format, a message was sent to remind participants that they were not required to type out each rating category (pleasure, meaning, engagement, happiness) for each reply; a four-digit reply corresponding to each category was sufficient.
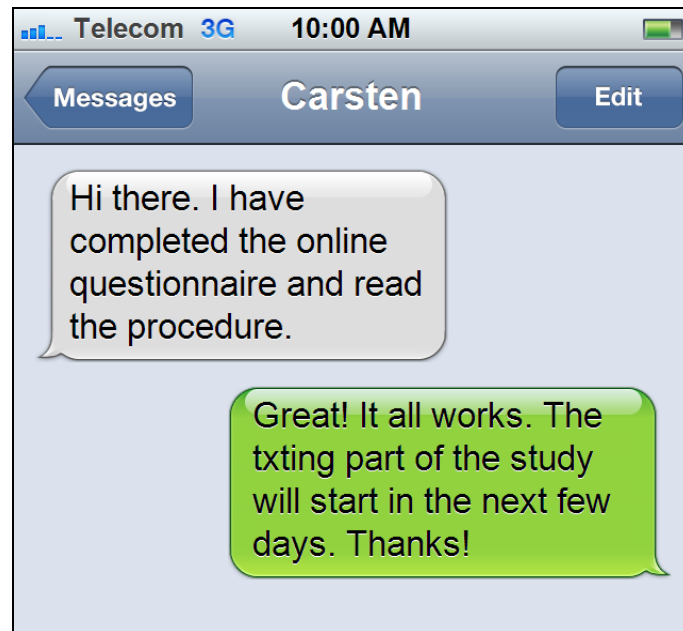
Figure 1. Screenshot of procedural text-message exchange.

Experience Sampling Text-Messages

The text-message format for data-collection was identical for all messaging, seen in Figure 2 below. Participants were instructed they were only required to submit numerical ratings for each category and to reply in the same order each time.
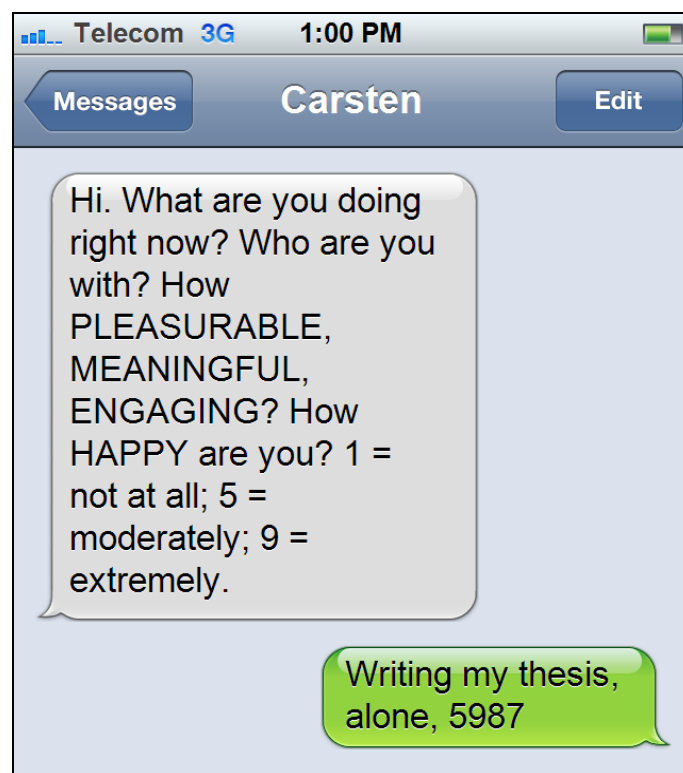
Figure 2. Screenshot of text-message format and example reply.

Participants were told to reply with as much detail as they felt necessary to accurately describe what they were doing and who they were with. Some example activities given during the procedure explanation included "watching tv at home", "walking to work", "in a work meeting", and "jogging around the park". Participants were asked to reply as soon as possible; if it was not safe to reply immediately (for example, while driving a vehicle) they were asked to reply as soon as it was safe to do so. Some examples of companionship given during the procedure explanation included "alone", "with my partner", "with a workmate", "with my boss", and "with a group of friends". Participants were instructed not to mention anyone directly by name.

For each rating category the following definitions were used: "*Pleasurable* means how much you are experiencing enjoyment or positive emotion; *Meaningful* means how much you feel the activity is rewarding, helping you to advance your goals, or is worthwhile; and *Engaging* means how much you feel the activity has you focused, challenged, or in the zone." Additionally, participants were asked to "rate your current feeling of happiness". The rating scale was the same for each variable, using a standard phone's 1-9 keypad as a scale, where 1 = not at all, 5 = moderately, and 9 = extremely.

A random within intervals schedule was used where one text-message was sent randomly during the morning, afternoon, and evening (on the hour within these periods). Each time period corresponded to and included; 9am-12pm, 1pm-5pm, and 6pm-10pm. Following the experience sampling phase a message was sent to advise the completion of the texting study. A final email was then sent which included debriefing information and a link to the online questionnaire for personality and well-being measures at time 2.

Prior to the actual data collection a pilot study was carried out (with $N = 7$) in order to ensure the procedure was acceptable to participants and to identify barriers to a high reply-rate. Participants confirmed the ease of the methodology and reply-rates to texts were greater than 95%. A copy of the procedure explanation sent to each participant is shown in appendix B.

Well-Being and Personality Measures

The following scales were used to measure well-being and personality in the online questionnaires at time 1 and time 2. All scale descriptives, reliabilities and stabilities are shown in Table 1 in the Results section.

Satisfaction with Life Scale

The satisfaction with life scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) consists of five items scored on a 7-point Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Participants rate statements that assess their global cognitive judgements of life satisfaction, for example, "In most ways my life is close to my ideal". Items are added to produce an overall total life satisfaction score.

The SWLS has become one of the most widely used measures of life satisfaction in recent decades and the psychometrics of the SWLS have received much attention (e.g. Pavot & Diener, 1993, 2008). Stability and reliability during the initial scale development were .82 and .87 respectively (Diener, Emmons, Larsen, & Griffin; 1985) and were similar when reviewed by Pavot and Diener (stability over 2 weeks–1 month ≥ .83; reliability ≥ .85; 1993).

Scale of Positive and Negative Experience

The scale of positive and negative experience (SPANE; Diener et al., 2010) is a 12-item questionnaire that uses six questions each to assesses the frequency with which positive and negative emotions are experienced. Three positive and three negative items enquire about general emotional experience (e.g. "pleasant" or "unpleasant"). Three positive and three negative items enquire about more specific emotions (e.g. "happy" or "sad"). Items are scored using a 5-point Likert scale ranging from 1 ("very rarely or never") to 5 ("very often or always"). Each positive or negative sub-scale is added to produce an overall score of positive affect (PA) and negative affect (NA). An affect balance of positive minus negative scores can also be produced.

The SPANE was created to improve on existing measures of emotional experience, notably the positive and negative affect schedule (PANAS; Watson, Clark, & Tellegen, 1988). The advantages of using the SPANE are that it avoids relying solely on high intensity emotions, and it allows for reporting of more general emotional experience, such as feeling "positive" or "negative". Reliability during the initial scale

development was .87 for PA and .81 for NA. Stability over one month was .62 for PA and .63 for NA (Diener et al., 2010).

Orientations to Happiness Questionnaire

The orientations to happiness questionnaire (OTH; Peterson, Park, & Seligman, 2005) contains 18 items scored on a 5-point Likert scale ranging from 1 ("not like me at all") to 5 ("very much like me"). There are six items for each of the 3 separate OTH domains; pleasure, meaning, and engagement. Participants rate their agreement with descriptions of each OTH domain. The average score on each of the three sub-scales indicates the degree to which each OTH domain is endorsed, with higher scores indicating higher endorsement of that OTH.

The orientation to pleasure domain uses items such as "Life is too short to postpone the pleasures it can provide". The orientation to meaning domain uses items such as "I have a responsibility to make the world a better place". The orientation to engagement domain uses items such as "I seek out situations that challenge my skills and abilities". The reliability of each OTH domain during scale development was .82 for pleasure, .72 for meaning, and .82 for engagement (Peterson, Park, & Seligman, 2005). As discussed (above), the OTH scale has been shown to be reliable over both the three and six-month periods (rs all ≥ .63; Ruch, Harzer, Proyer, Park, & Peterson, 2010).

Ten-Item Personality Inventory

The ten-item personality inventory (TIPI; Gosling, Rentfrow, & Swann, 2003) is a very short version of the conventional Big Five personality assessment instruments. Participants rate their agreement with personality descriptions scored on a 7-point Likert scale from 1 ("disagree strongly") to 7 ("agree strongly"). The TIPI uses two items per personality domain where one item is reverse-scored. For example, the item "Critical, quarrelsome" is reverse-scored to indicate agreeableness. Each pair of items are added (following reverse-coding) to produce a total score on each personality dimension.

The scale authors acknowledged the somewhat lower-than-usual scale internal reliabilities during their development of the TIPI (extraversion .68, agreeableness .40, conscientiousness .50, emotional stability .73, openness to experience .45;

Gosling et al., 2003). The scale authors also acknowledged the psychometric consequences of using only two-item measures of personality. However, having a significantly shorter and less intensive scale for participants to complete is the TIPI's main advantage and why it was selected for use in this study. Acceptable test–retest stabilities of all personality dimensions attest to the construct validity of the scale (extraversion .77, agreeableness .71, conscientiousness .76, emotional stability .70, openness to experience .62; test–retest interval six weeks; Gosling, Rentfrow, & Swann, 2003).

Chapter 3: Results

Introduction

There were 3633 text-messages received during the study in addition to the online questionnaire data. All but eight participants completed online personality measures again at time 2. Time 1 data was used for most analyses, for several reasons. All personality measures were found to be stable over the test-retest period (average time 13 days, see Table 1); time 1 data was guaranteed to be free from possible reactivity due to the study procedure (there was some evidence of this, discussed below); and imputation was less preferred to using actual responses. An average of time 1 and time 2 measures was only used during testing of the full life hypothesis, discussed in detail below.

The terminology of multilevel modelling is adopted, reflecting the nested nature of the data—that is, momentary reporting at level 1 nested within participants at level 2 (as per Jose, Lim, & Bryant, 2012). Level 2 refers to trait data (demographics, OTH endorsement, and personality). Level 1 refers to momentary reporting. Descriptive statistics, reliability, and stability for all trait measures are shown in Table 1 below.

Table 1

Descriptive Statistics, Scale Reliability and Stability for Level 2 Trait Measures

Scale		Mean (*SD*)	Cronbach's alpha	Stability
Satisfaction with life scale		25.13 (5.22)	.81	.81
Scale of positive and negative emotions	Positive affect	22.64 (3.46)	.82	.79
	Negative affect	14.50 (3.87)	.77	.72
Orientation to happiness	Pleasure	3.22 (.77)	.77	.84
	Meaning	3.14 (.83)	.76	.84
	Engagement	2.77 (.60)	.58	.72
Ten item personality inventory	Extraversion	8.57 (3.07)	.77	.85
	Agreeableness	9.82 (2.16)	.41	.71
	Conscientiousness	10.30 (2.49)	.54	.76
	Emotional stability	8.99 (3.13)	.68	.83
	Openness	10.75 (2.14)	.44	.79

Notes. All stability test-retest correlations *p*s < .001. Means, standard deviations, and Cronbach's alphas are for time 1. Average time between completion of time 1 and time 2 measures was 13 days.

When compared to the internet sample of 330 New Zealanders in the study by Park, Peterson, and Ruch (2009), the present study's participants had higher orientation to pleasure and life satisfaction scores, but lower orientation to meaning and engagement scores (*M*s[*SD*s] reported by Park et al.; SWLS = 22.05 [.87]; pleasure = 3.04 [.90]; meaning = 3.38 [.82]; engagement = 3.11 [.73]). As previously discussed, age has been found to be inversely related to an orientation to pleasure (Peterson et al., 2005). As the average age of the sample in this study was relatively young (23 years old) this could explain a higher aggregated pleasure score and lower meaning and engagement scores (age information in the sample used by Park, Peterson, and Ruch was not supplied).

Momentary Reporting

Text-message replies were independently coded twice and Cohen's kappa for inter-rater reliability calculated. The lead researcher coded the entire data-set independently and a team of research assistant raters provided the comparison coding check. Each assistant coded between 250-1000 different behaviours. Training on how to code each behaviour category was provided. Raters were remunerated with refreshments.

Text-Message Coding

Thirty categories of daily activities were used to code all text-message replies. Four previous studies using categorised daily activities informed the behaviour coding in this research (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004; MacKerron & Mourato, 2011; Robinson & Godbey, 1997; White & Dolan, 2009). Where there was agreement between two or more studies on one behaviour category it was initially used as a coding category (see appendix C for the full list of behaviours from other studies). Following the pilot study several activity groups were split into more granular categories to suit the present sample, e.g. the category working/ studying used by MacKerron and Mourato (2011) was split into "paid work" and "studying/ working on education".

Two previous studies informed the companionship coding in this research (Kahneman et al., 2004; MacKerron & Mourato, 2011)[3] and nine companionship categories were used to code the data-set. Categories were adjusted to suit the current study. Initial behaviour coding agreed 90.1% overall. Cohen's kappa between raters for behaviour coding ranged .85–.93. Initial companionship coding agreed 95.6%. Cohen's kappa between raters for companionship coding ranged .94–.99. Disagreements between raters were resolved by the lead researcher.

Response Rates and Latencies

On average participants replied to 96.9 percent of text-messages (SD = 5.7%, range 71%–100% [15–21 messages]), excluding duplicates and messages clearly sent to replace earlier replies. For example, one message reply read "Eating breakfast, 7338", followed one minute later by "Eating breakfast, Alone, 7338". The first message was deleted from analyses. In other cases messages were combined when it was clear participants had sent additional information after the initial response. For example "Buying contact lenses, 5758" was followed (conscientiously) 2 hours and 5 minutes later by "Ooops forgot to say by myself". In this case the message for final analysis became "Buying contact lenses, by myself, 5758". Other messages which were clearly sent in error were deleted, e.g. "All done, on my way now, are you on the bus yet?" followed one minute later by "Hah, fail." Sixty nine percent of the 173 participants replied to all 21 text-messages.

The median text-message reply latency was 5 minutes 14 seconds, range <1 minute to 22 hours. Forty-nine percent of text-messages were received within 5 minutes and 85% of text-messages were received within one hour. Where text-messages were clearly attempts to make up for earlier missed information they were included in the analyses despite some large delays in reply, e.g. "Yesterday evening: Driving to Taylor's Mistake, with partner and friend, 8788". This contributed to a large average reply delay (M (SD) = 33 minutes 42 seconds (>1 hour)).

---

[3] The inclusion of companionship in the current study design was influenced by other ESM research, notably the Mappiness smartphone study by MacKerron & Mourato (2011). However, investigating companionship was not one of the primary aims of the current research. Analyses relating to companionship are therefore shown in appendix D.

Relationships Between Trait Measures

The first aim of this research was to identify the relationships between OTH domains and Big Five personality dimensions. Accordingly, pairwise correlations between all level 2 trait variables were computed and are shown in Table 2 below. Endorsement of an orientation to pleasure was positively correlated with extraversion and openness to experience scores. Meaning was also positively correlated with extraversion and with agreeableness. Engagement was correlated with openness to experience, extraversion, and emotional stability.

Table 2

Correlations between Level 2 Trait Measures

	SWLS	PA	NA	OTH(P)	OTH(M)	OTH(E)	E	A	C	ES
PA	.46***									
NA	-.44***	-.55***								
OTH(P)	.27***	.29***	-.13							
OTH(M)	.27***	.10	-.02	.03						
OTH(E)	.27***	.18*	-.06	.24**	.36***					
E	.35***	.36***	-.26***	.33***	.21**	.19*				
A	.21**	.23**	-.19*	.14	.26***	.12	.14			
C	.22**	.17*	-.15*	-.14	.13	.12	.02	.17*		
ES	.37***	.43***	-.66***	.12	.08	.17*	.23**	.17*	.13	
O	.06	.16*	-.09	.26***	.13	.38***	.26***	.12	.04	.14

Notes. Correlations shown at time 1. PA = positive affect, NA = negative affect, OTH(P) = orientation to pleasure, OTH(M) = orientation to meaning, OTH(E) = orientation to engagement, E= extraversion, A = agreeableness, C = conscientiousness, ES = emotional stability, O = openness to experience. * $p < .05$, ** $p \leq .01$, *** $p \leq .001$.

As previously noted, pleasure has tended to have a weaker relationship with SWB than the other OTH domains (Giannopoulos & Vella-Brodrick, 2011; Park et al., 2009; Peterson et al., 2005). This was not the case in the current study, however. Pleasure, meaning, and engagement were all equally correlated with life satisfaction. Pleasure was also found to be more strongly correlated with positive affect and with negative affect than meaning or engagement, although OTH correlations with negative affect were all non-significant (negative affect was similarly non-

significantly correlated to pleasure and meaning in the study reported by Vella-Brodrick, Park, & Peterson, 2009).

The relationships between personality and SWB in this study were similar to those found by Haslam, Whelan, and Bastian (2009). The authors used an Australian university sample (N = 180) which allows for a relatively similar comparison group to the current sample. Haslam et al. found neuroticism (r = -.45) and extraversion (r = .44) to be the personality dimensions most strongly correlated to life satisfaction, which was also the case in the present sample, albeit the correlations in this study were smaller. For positive affect, Haslam et al. found extraversion (r = .55) to be the strongest correlate, while in the current study emotional stability was the strongest correlate followed by extraversion. Interestingly, Haslam et al. found neuroticism to be the strongest correlate of negative affect (r = -.66) which was also the strongest correlate of negative affect in the present study (albeit emotional stability) with the same strength of correlation.

Regression Analyses

This study aimed to replicate the research by Vella-Brodrick, Park, and Peterson (2009). A series of hierarchical regression analyses were therefore used to test the predictive ability of OTH to explain SWB, both independently and when controlling for personality, in addition to testing the effect of any two or three-way interactions. Two hierarchical regression analyses were conducted; the first included only demographics and OTH domains; the second regression controlled for Big Five personality traits.

Dependent well-being variables were life satisfaction, positive affect, and negative affect. Predictors were entered in four steps; demographics (age, gender, income, ethnicity) and personality variables (in the full model) were entered at step one, followed by the three OTH domains at step two, followed by the two-way OTH interaction terms at step three, followed by the three-way OTH interaction term at step four. Interaction terms were calculated using centred variables. The results of the regression using demographics and OTH *without* personality are shown in Table 3 below. None of the interaction terms in either regression model were significant predictors and are subsequently not shown in the tables. The only demographic factor to predict SWB in any way was gender, with females experiencing more

negative affect than males, but only for the model without personality (coding; males = 1, females = 2).

Table 3

Regression Results for Demographics and Orientations to Happiness Predicting Subjective Well-Being

			Model			Predictors			
DV	Step	R^2	$R^2 \Delta$	*F* Change	Sig.		Beta	*t*	Sig.
SWLS	1	.033	.033	$F(5, 167) = 1.15$	.337	Age	-.027	< 1	.778
	2	.181	.147	$F(3, 164) = 9.82$	.000	Gender	.036	< 1	.635
	3	.189	.008	$F(3, 161) < 1$	.644	Pleasure	.207	2.59	.011
	4	.192	.004	$F(1, 160) < 1$	.404	Meaning	.170	2.08	.039
						Engagement	.171	2.05	.042
PA	1	.049	.049	$F(5, 167) = 1.71$	.135	Age	.025	< 1	.794
	2	.141	.092	$F(3, 164) = 5.88$	.001	Gender	-.007	< 1	.929
	3	.158	.017	$F(3, 161) = 1.07$	.362	Pleasure	.300	3.70	.000
	4	.169	.011	$F(1, 160) = 2.19$	.141	Meaning	.033	< 1	.690
						Engagement	.082	< 1	.334
NA	1	.080	.080	$F(5, 167) = 2.91$	.015	Age	-.118	-1.19	.235
	2	.103	.023	$F(3, 164) = 1.41$	.243	Gender	.192	2.44	.016
	3	.109	.006	$F(3, 161) < 1$	.802	Pleasure	-.129	-1.53	.127
	4	.111	.002	$F(1, 160) < 1$	.520	Meaning	-.003	< 1	.968
						Engagement	.017	< 1	.843

Notes. Hierarchical regression model: Step one included demographics; step two included single OTH domains; step three included two-way interaction terms; step four included the three-way interaction term. Betas shown are from the full model in each regression.

For the model without personality, all three OTH domains were significant predictors of life satisfaction. Pleasure explained more variance than meaning or engagement and had a more significant beta-weight (in contrast to all three OTH domains having equivalent correlations to life satisfaction). Pleasure was also the only OTH domain to explain variance in positive affect. None of the OTH domains were significant predictors of negative affect. Compared to the study by Vella-Brodrick et al. (2009), the current study explained more variance in life satisfaction (19.2% compared to 7.9%) and negative affect (11.1% compared to 5.7%), but less variance in positive affect (16.9% compared to 26.5%). The results of the regression using demographics and OTH *with* personality are shown in Table 4.

Table 4

Regression Results for Demographics, Personality and Orientations to Happiness
Predicting Subjective Well-Being

DV	Step	R^2	$R^2 \Delta$	F Change	Sig.		Beta	t	Sig.
SWLS	1	.272	.272	$F(10, 162) = 6.05$	.000	Age	-.041	< 1	.635
	2	.346	.074	$F(3, 159) = 6.00$	.001	Gender	.052	< 1	.486
	3	.351	.005	$F(3, 156) < 1$	.742	Extraversion	.215	2.93	.004
	4	.360	.009	$F(1, 155) = 2.22$	.138	Agreeableness	.061	< 1	.391
						Conscientiousness	.161	2.25	.026
						Emotional stability	.261	3.54	.001
						Openness	-.165	-2.24	.026
						Pleasure	.153	1.95	.054
						Meaning	.108	1.40	.163
						Engagement	.159	2.00	.048
PA	1	.302	.302	$F(10, 162) = 7.02$	.000	Age	-.028	< 1	.754
	2	.331	.029	$F(3, 159) = 2.27$	.083	Gender	.039	< 1	.603
	3	.343	.012	$F(3, 156) < 1$	.423	Extraversion	.218	2.94	.004
	4	.349	.006	$F(1, 155) = 1.42$	.236	Agreeableness	.098	1.38	.170
						Conscientiousness	.095	1.31	.193
						Emotional stability	.304	4.07	.000
						Openness	.002	< 1	.978
						Pleasure	.192	2.41	.017
						Meaning	-.043	< 1	.584
						Engagement	.028	< 1	.724
NA	1	.469	.469	$F(10, 162) = 14.31$	.000	Age	-.071	< 1	.365
	2	.479	.010	$F(3, 159) < 1$	.405	Gender	.057	< 1	.393
	3	.480	.001	$F(3, 156) < 1$	.934	Extraversion	-.151	-2.30	.023
	4	.483	.002	$F(1, 155) < 1$	.399	Agreeableness	-.077	-1.22	.224
						Conscientiousness	-.075	-1.16	.247
						Emotional stability	-.581	-8.75	.000
						Openness	.052	< 1	.434
						Pleasure	-.030	< 1	.670
						Meaning	.064	< 1	.355
						Engagement	.064	< 1	.369

Notes. Hierarchical regression model: Step one included demographics and Big Five personality measures; step two included single OTH domains; step three included two-way interaction terms; step four included the three-way interaction term. Betas shown are from the full model in each regression.

The regression including personality accounted for more variance in SWB than the simpler model containing only demographics and OTH. Again, compared to Vella-Brodrick et al. (2009), the current study explained more variance in life satisfaction (36.0% compared to 19.9%) and negative affect (48.3% compared to 34.8%), but less variance in positive affect (34.9% compared to 37.3%). There was little evidence in this study that OTH predicted variance in SWB over and above that accounted for by personality. Engagement predicted life satisfaction (pleasure was a trend only), and pleasure predicted positive affect. In the study by Vella-Brodrick et al., engagement significantly predicted life satisfaction, engagement and meaning both predicted positive affect, and pleasure and meaning predicted negative affect. Emotional stability was the strongest predictor of all SWB variables in both the current study and that by Vella-Brodrick et al. (betas; life satisfaction .261 compared to .253, positive affect .304 compared to .172, negative affect -.581 compared to -.517).

Exploratory Data Analysis

There were two findings from the exploratory data analysis important to note. Firstly, multilevel modelling analyses indicated there was some influence of time on momentary happiness scores in this study ($b[SE]$ = .009 [.005], p = .062). Therefore, while not statistically significant, participants tended to get (very slightly) happier over the study period, suggesting there was perhaps some reactivity to the text-messaging procedure. Conner and Reid (2011) investigated the effects of responding to momentary 'reminders' of happiness and identified that reactivity was moderated by personality factors such as depression and neuroticism. There was no evidence of moderated reactivity in this sample due to emotional stability (p = .58) or any other personality variable. Of the OTH domains, engagement was found to moderate the effect of time on momentary happiness ($b[SE]$ = .018 [.009], p = .044); for pleasure there was a trend only ($b[SE]$ = .12 [.007], p = .075).

Secondly, age was found to have significant relationships with variables at both level 1 and level 2. Older participants tended to have a higher orientation to meaning (r = .16, p < .05); correlations with the OTH pleasure and engagement domains were non-significant. Older participants also reported experiencing on average less negative affect (r = -.16, p <.05). Multilevel modelling revealed a small but significant influence of age on all momentary responses (coefficients ≤ .04, ps all < .001). Older

participants in this sample were therefore more eudaimonically orientated, experienced greater well-being (in terms of less negative affect), and rated their daily activities as (slightly) more pleasurable, meaningful, and engaging.

Daily Activities and Orientation to Happiness Ratings

The second exploratory aim was to identify how daily activities were rated on the OTH domains of pleasure, meaning, engagement, and happiness. Behaviour categories and associated aggregated ratings are shown in Table 5. To aid with interpretation, average momentary ratings are also displayed in Figure 3. Several interesting patterns of behavioural ratings should be noted. Firstly, activities were rated as a mix of both hedonia and eudaimonia—behaviours were clearly experienced as being a blend of pleasure, meaning, and engagement. This conforms with the 'blended activities' concept of daily behaviours put forward by Steger et al. (2008).

Secondly, several behavioural categories displayed notably inconsistent ratings. For example, while studying/ working on one's education rated as one of the least pleasurable activities at 28 out of 30 categories, it rated relatively high on meaning at 7th overall. The reciprocal pattern was also present; while gaming/ playing video-games rated as 6th overall on pleasure, it scored near the bottom on meaning at 24 out of 30 categories.

Finally, aggregated ratings on behaviours were similar to those in previous studies. For example, sex/ making love was the highest rated behaviour on all dimensions consistent with several other daily activity studies (Kahneman et al., 2004; Killingsworth & Gilbert, 2010; Robinson & Godbey, 1997). Being sick/ healthcare was rated lowest in the current study and second lowest in the research by Robinson and Godbey. Similarly, housework/ chores/ DIY was rated relatively low in the current study and is also consistently rated as unenjoyable in other studies (Kahneman et al., 2004; Robinson & Godbey, 1997). Interestingly, Facebook—an activity that anecdotally captures an inordinate amount of attention during the modern work day—was rated lowest overall on meaning, second lowest on happiness, and near the bottom of all categories on engagement and pleasure. Further research is needed to understand why an activity that people seem to be so attracted to (although not reflected in its occurrence in this study) is so seemingly unrewarding on both hedonic and eudaimonic dimensions.

Table 5

Behaviour Occurrences and Average Momentary Ratings

Behaviour	Occurrences		Pleasure		Meaning		Engagement		Happiness	
Sex/ making love	11	(0.3%)	8.55	(1st)	7.64	(1st)	8.09	(1st)	8.55	(1st)
Drinking alcohol/ partying	49	(1.4%)	7.49	(2nd)	5.86	(10th)	7.16	(5th)	7.76	(2nd)
Care-giving/ volunteering	11	(0.3%)	6.55	(9th)	7.09	(3rd)	7.00	(6th)	7.55	(3rd)
Meditating/ religious activities	19	(0.5%)	6.58	(8th)	7.47	(2nd)	6.79	(7th)	7.53	(4th)
Childcare/ playing with children	17	(0.5%)	6.53	(10th)	6.76	(4th)	6.41	(11th)	7.41	(5th)
Listening to music/ podcast	16	(0.5%)	7.38	(3rd)	5.19	(17th)	6.25	(13th)	7.38	(6th)
Socialising/ talking/ chatting	203	(5.8%)	6.95	(5th)	5.84	(11th)	6.50	(10th)	7.27	(7th)
Hobbies/ arts/ crafts	57	(1.6%)	7.05	(4th)	6.51	(5th)	7.23	(4th)	7.19	(8th)
Shopping/ errands	76	(2.2%)	6.16	(15th)	5.21	(16th)	5.75	(16th)	7.11	(9th)
Gaming/ video-games	71	(2%)	6.82	(6th)	4.48	(24th)	6.72	(9th)	7.07	(10th)
Gardening/ outdoor housework	3	(0.1%)	6.67	(7th)	6.00	(9th)	8.00	(2nd)	7.00	(11th)
Exercising/ sports	101	(2.9%)	6.48	(11th)	6.33	(6th)	6.78	(8th)	6.98	(12th)
Eating/ snacking/ drinking tea/ coffee	267	(7.6%)	6.37	(13th)	5.00	(20th)	5.26	(22nd)	6.73	(13th)
Cooking/ preparing food	94	(2.7%)	5.85	(17th)	5.01	(19th)	5.61	(20th)	6.65	(14th)
Watching tv/ movies	452	(12.9%)	6.31	(14th)	4.43	(26th)	5.64	(19th)	6.65	(15th)
Pet care/ playing with animals	13	(0.4%)	5.54	(19th)	5.77	(12th)	4.92	(24th)	6.62	(16th)
Reading (for pleasure, not studying)	59	(1.7%)	6.41	(12th)	5.25	(14th)	6.27	(12th)	6.37	(17th)
Sleeping/ resting/ relaxing	256	(7.3%)	6.12	(16th)	4.48	(22nd)	4.49	(26th)	6.22	(18th)
Other	7	(0.2%)	5.57	(18th)	5.71	(13th)	7.57	(3rd)	6.14	(19th)
Admin/ organising/ finances	92	(2.6%)	4.87	(25th)	4.90	(21st)	5.04	(23rd)	6.11	(20th)
Washing/ dressing/ grooming	69	(2%)	5.04	(22nd)	3.78	(29th)	4.07	(30th)	6.01	(21st)
Internet/ on computer (non-specific)	85	(2.4%)	5.48	(20th)	4.22	(28th)	5.32	(21st)	5.95	(22nd)
Commuting/ travelling	334	(9.5%)	4.72	(27th)	4.48	(23rd)	4.43	(29th)	5.88	(23rd)
Paid work	254	(7.2%)	4.82	(26th)	5.21	(15th)	5.72	(17th)	5.81	(24th)
Lectures/ class/ lab	285	(8.1%)	4.97	(23rd)	6.05	(8th)	5.79	(15th)	5.80	(25th)
Texting/ emailing	29	(0.8%)	5.34	(21st)	5.03	(18th)	5.66	(18th)	5.76	(26th)
Studying/ working on education	453	(12.9%)	4.62	(28th)	6.20	(7th)	5.84	(14th)	5.61	(27th)
Housework/ chores/ DIY	68	(1.9%)	4.03	(29th)	4.24	(27th)	4.47	(27th)	5.54	(28th)
Facebook	44	(1.3%)	4.91	(24th)	3.30	(30th)	4.45	(28th)	5.40	(29th)
Sick/ healthcare	22	(0.6%)	3.59	(30th)	4.45	(25th)	4.68	(25th)	3.82	(30th)

Note. Behaviours listed in descending order based on average happiness ratings. Relative rankings are shown in brackets.
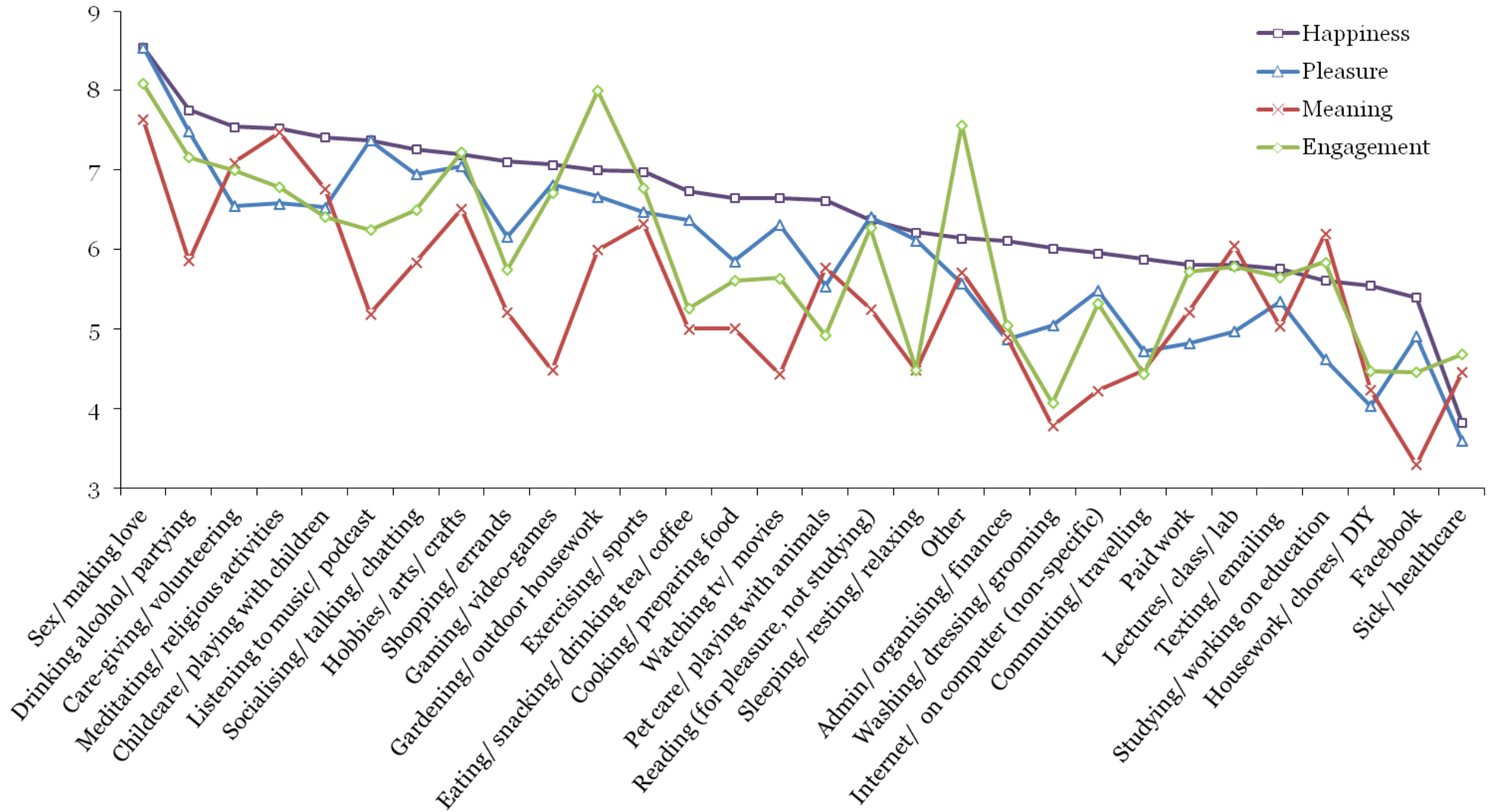
Figure 3. Average rating of each behaviour category on pleasure, meaning, engagement, and happiness. Behaviours ordered from left to right on average happiness rating.

Dominant Orientations to Happiness

The third aim of this study was to explore the concept of a 'dominant' OTH within individuals. Initial analyses identified which OTH domain was scored highest for each participant within the sample. Eighty nine participants (51.4%) scored highest on an orientation to pleasure, 59 (34.1%) had a dominant orientation to meaning, and 16 (9.2%) had a dominant orientation to engagement. Nine participants (5.2%) had an orientation to happiness that was equally strong in at least two of the three domains. Five participants had an equivalent pleasure–meaning orientation, two participants had an equivalent pleasure–engagement orientation, one participant had an equivalent meaning–engagement orientation, and one participant was equivalent in all three domains.

Subsequent analyses sought to identify the *relative magnitude* associated with OTH 'dominance'. The distribution of differences was therefore investigated between highest scored OTH domain and the next highest (middle) OTH domain. Time 1 and time 2 questionnaires were pooled for a total of 338 cases. To control for individual variance in scoring on the 18 items of the OTH scale, OTH domains were converted to z-scores using each participant's mean and standard deviation. Differences in z-scores were then calculated between each participant's highest scored OTH domain and their next highest OTH domain. The distribution of z-score differences across the sample is shown below in Figure 4. Half of all z-score differences were less than 0.37 of a standard deviation. The top two OTH domains were found to differ by less than 0.20 of a standard deviation in over 33 percent of cases.
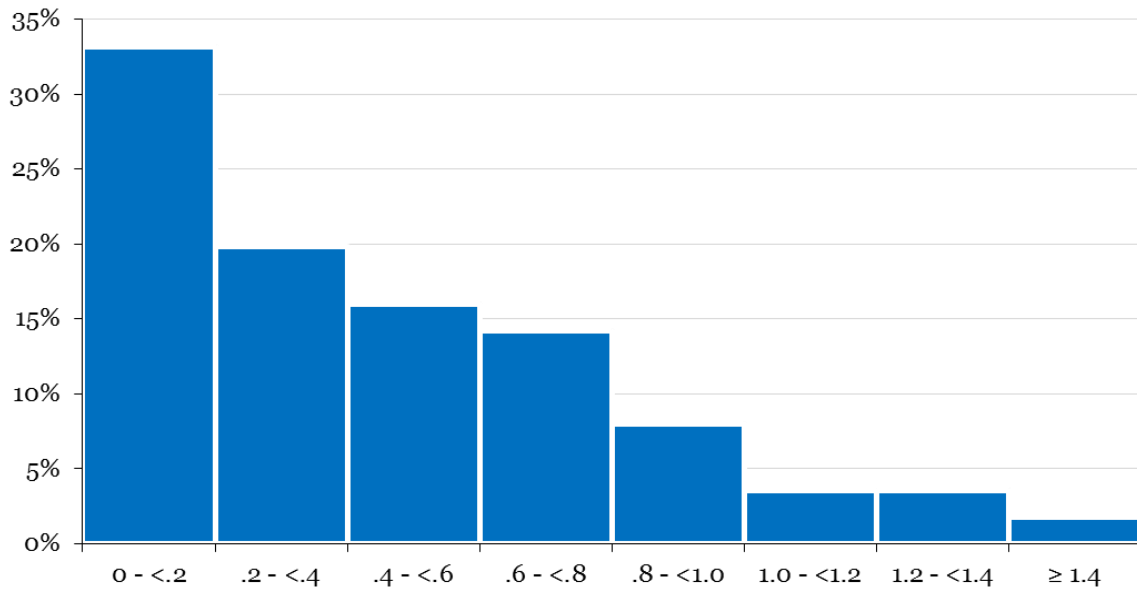
Figure 4. Distribution of within-person z-score differences between highest and next highest (middle) OTH domains.

The size of the difference between dominant and second-highest OTH scores was then calculated in terms of points on a Likert scale (the OTH scale uses a 5-point Likert scale ranging from 1 'not like me at all' to 5 'very much like me'). To do this, the six items for each OTH domain were summed to produce a total raw score and the difference between the two highest domains was then calculated. Across participants, the average difference between the highest and next-highest OTH domain was 2.95 Likert scale points (the median difference was 2.00). Averaged across the six items of each OTH domain, there was therefore half a Likert scale point difference in scoring on each item between the highest and next highest domain. Dominant OTH was subsequently investigated to see if it predicted engaging in different types of behaviours.

Frequency of Behaviours: Investigating the 'Type of Life' Hypothesis

The following analyses tested the hypothesis that dominant OTH predicted engaging in different behaviours. Behaviours with greater than 100 occurrences were selected for this analysis. This included nine behavioural categories: Studying/ working on education; watching tv/ movies; commuting/ travelling; lectures/ class/ lab; eating/ snacking/ tea/ coffee; sleeping/ resting/ relaxing; paid work; socialising/ talking/ chatting; and exercising/ sports.

Chi-square tests for independence were performed for each of the behaviour categories. There were no violations of assumptions; minimum cell size criteria were met in all cases. The nine participants who scored equivalent on two or more of the OTH domains were dropped for these analyses, making $N = 164$.

No statistically significant differences were found in the frequency of behaviours when comparing by dominant OTH group. The hypothesis that dominant OTH would be associated with engaging in different activities was therefore not supported. Results are displayed below in Table 6.

Table 6

Chi-square Tests for Independence of Behaviours by Dominant OTH

Behaviour	Dominant Orientation			Chi-square	*p*-value	phi
	Pleasure	Meaning	Engagement			
Lectures/ class/ lab	7.6	7.7	7.5	.012	.994	.002
Studying/ working on education	12.3	13.2	10.2	1.98	.371	.025
Paid work	7.9	6.5	5.1	3.84	.147	.035
Commuting/ travelling	9.2	8.6	11.2	2.05	.358	.025
Socialising/ talking/ chatting	6.5	4.8	6.1	3.81	.149	.034
Watching tv/ movies	12.8	11.3	14.3	2.59	.274	.028
Sleeping/ resting/ relaxing	7.6	6.3	4.8	4.17	.125	.036
Eating/ snacking/ tea/ coffee	7.3	7.7	7.1	.238	.888	.009
Exercising/ sports	2.8	3.0	1.4	2.40	.301	.027

Notes. Results show percentage of time spent engaging in each behaviour for each dominant OTH group. Behaviours with greater than 100 instances were used.

While this study found no evidence that dominant OTH influenced the actual frequency of different behaviours, it was conceivable that OTH influenced the actual experience—and therefore the ratings—of activities. This could mean that while people do not necessarily perform different everyday activities, they nevertheless experience those same activities in fundamentally different ways. This possibility provided an additional avenue of enquiry for the 'type of life' analyses and was tested for using multi-level modelling.

Nezlek has discussed at length how multi-level random coefficient modelling (MRCM; called multi-level modelling in this study) provides the most accurate analysis of multi-level nested data (2001; 2003; 2007). The influence of level 2 trait

measures on level 1 momentary responding was therefore analysed using hierarchical linear modelling software (HLM v7; Raudenbush, Bryk, Cheong, Congdon, & Du Toit, 2011).

Results for all traits are displayed in Table 7 below. Results are across *all behaviour categories*. Coefficients (*b*) show the amount of influence an increase in one unit of each level 2 trait variable has on each momentary rating. Robust standard errors (*SE*) are reported in brackets.

Table 7

Influence of Level 2 Trait Measures on L1 Momentary Ratings

Level 2 Measures	Level 1 Momentary Ratings			
	Pleasure	Meaning	Engagement	Happiness
SWLS	.04 (.01)***	.03 (.02)*	.02 (.02)	.05 (.01)***
PA	.07 (.02)***	.08 (.02)***	.07 (.02)***	.13 (.02)***
NA	-.02 (.02)	-.03 (.02)	-.01 (.02)	-.05 (.02)**
OTH(P)	.16 (.08)*	.36 (.09)***	.25 (.09)**	.14 (.08)
OTH(M)	.22 (.08)**	.30 (.10)**	.21 (.08)*	.11 (.07)
OTH(E)	.14 (.09)	.33 (.13)*	.29 (.11)*	.07 (.11)
E	.05 (.02)**	.08 (.03)**	.07 (.02)**	.05 (.02)*
A	.05 (.03)	.07 (.04)	.07 (.03)*	.08 (.03)**
C	.07 (.02)**	.04 (.03)	.06 (.03)*	.06 (.02)**
ES	.05 (.02)*	.06 (.03)*	.05 (.02)	.07 (.02)***
O	.03 (.03)	.04 (.04)	.10 (.03)**	.03 (.03)

Note. Coefficients are shown with robust standard errors in brackets. OTH(P) = orientation to pleasure. OTH(M) = orientation to meaning. OTH(E) = orientation to engagement. * $p < .05$, ** $p \leq .01$, *** $p \leq .001$.

Each of the three OTH domains at level 2 had relationships with momentary ratings of pleasure, meaning, and engagement at level 1 (with one exception that engagement did not influence momentary pleasure to within significance). For example, an increase of one point on an orientation to pleasure score was associated with higher momentary ratings of pleasure (*b* = .16), meaning (*b* = .36), and engagement (*b* = .25). Important to note here is that, given the nature of HLM

analyses, these cross-level relationships were found on average across all participants, behaviours, and momentary reporting points.

Interestingly, none of the OTH domains influenced momentary happiness to within significance (pleasure $p = .10$; meaning $p = .14$; engagement $p = .54$), whereas every other level 2 trait variable except openness to experience *was related* to momentary happiness.

The associations of the three OTH domains with momentary ratings of pleasure, meaning, and engagement were larger than any of the other level 2 variables. This indicates that OTH had more influence on momentary responding than the other personality measures. However, the influence of each OTH trait on its matching momentary dimension was not consistent, so that each OTH domain not only influenced the same momentary experience domain, it also shared a relationship with the other non-matching momentary domains as well. For example, orientation to meaning influenced momentary meaning ($b = .30$), but it also influenced momentary pleasure ($b = .22$) and engagement ($b = .21$).

The largest influence on momentary pleasure ratings was orientation to meaning ($b = .22$); the largest influence on momentary meaning ratings was orientation to pleasure ($b = .36$); the largest influence on momentary engagement ratings was orientation to engagement ($b = .29$); and the largest influence on momentary happiness ratings was positive affect ($b = .13$).

A final test of the 'type of life' hypothesis used the same methodology as above, but only *specific behaviours* were investigated at level 1, and only the influence of the OTH domains were used at level 2. Again, only behaviours with over 100 instances were used. The remaining categories served as the comparison group using dummy coding, where 1 = each of the 9 categories of interest, and 0 = everything else. The results show the relative influence of OTH on momentary ratings of behaviours, relative to the dummy coded reference group. Multilevel model coefficients are shown in Table 8.

There were very few significant slopes when analysed by specific behaviour category and for ease of interpretation only those coefficients that reached significance are displayed. Omitted from Table 8 are behaviours that did not return

significant results; studying/ working on education; watching tv/ movies; commuting/ travelling; eating/ snacking/ tea/ coffee; and exercising/ sports.

Table 8

Influence of Orientations to Happiness on Momentary Ratings of Daily Behaviour

Level 2 Orientation to happiness		Pleasure				Meaning				Engagement			
Level 1 Momentary Rating		P	M	E	H	P	M	E	H	P	M	E	H
Behaviour	Lectures/ class/ lab	-.32 (.17)a		-.61 (.21)**									
	Paid work					.35 (.16)*			.36 (.15)*	.53 (.23)*		.61 (.28)*	.46 (.19)*
	Socialising/ talking/ chatting			-.46 (.20)*									
	Sleeping/ resting/ relaxing	.36 (.19)a		.56 (.25)*									

Notes. Table showing influence of OTH domains on momentary ratings of behaviours; significant coefficients only are displayed (except ^{a} = $p < .06$ trend only). Robust standard errors in brackets displayed under coefficients. P = pleasure, M = meaning, E = engagement, H = happiness. * $p < .05$, ** $p \leq .01$.

Orientation to pleasure was found to have an influence on the momentary experience of attending lectures and classes. Higher orientation to pleasure scores were associated with lower ratings of momentary pleasure and engagement ratings. Orientation to pleasure also influenced momentary ratings of sleeping and relaxing, where higher orientation to pleasure scores were associated with higher momentary ratings of pleasure and engagement. Additionally, both orientation to meaning and orientation to engagement influenced the experience of paid work—notably momentary happiness ratings during work.

In summary, the 'type of life' hypothesis was only partially supported in this study. There was no evidence to support the hypothesis that dominant OTH would influence engaging in different behaviours. There was evidence that OTH influenced the *experience* of everyday activities. However, this influence did not seem to conform to a direct one-to-one relationship of like-trait to like-momentary rating.

When collapsed across all behaviour categories, each OTH domain was found to influence nearly all of the momentary ratings of pleasure, meaning, and engagement. When looking at specific behaviours, orientation to pleasure was associated with lower momentary ratings during formal class activities and with higher momentary ratings during relaxing behaviours. The orientations to meaning and engagement were associated with higher momentary ratings of paid work behaviours.

The Full Life Hypothesis: OTH Median Split Comparisons

This study sought evidence for 'the full life' hypothesis, as per Peterson et al. (2005). For these analyses participants' OTH scores were averaged across time 1 and time 2 to give an overall endorsement of each OTH domain within the study period (for the eight participants without time 2 data, their time 1 scores were simply used). High and low scorers on each OTH dimension were identified using median splits, similar to the methodologies adopted by Giannopoulos and Vella-Brodrick (2011) and by Huta and Ryan (2009). This produced four OTH categories: Thirty-five participants (20.2%) scored below the median on all three OTH; 57 (32.9%) scored above the median on one OTH; 49 (28.3%) scored above the median on two OTH; and 32 (18.5%) scored above the median on all three OTH.

MANOVAs were performed to test for differences between OTH median split group means. Two levels of well-being variables were used; life satisfaction, positive affect, and negative affect scores were used at level 2; and momentary pleasure, meaning, engagement, and happiness scores were used at level 1. Assumption testing was conducted with some notable violations. Homogeneity of variance for SWLS using Levene's test approached significance (p = .054), therefore a more conservative alpha level of .01 was used. Homogeneity of variance for meaning at level 2 was violated also (p = .006). Box's test of equality of covariance matrices was violated at level 1 (p < .001), however Tabachnick and Fidell (2007, p. 281) warn that Box's M-test can be too restrictive with large sample sizes. More conservative alpha levels were adopted to account for these violations.

The overall models were significant at both level 1 (F(12, 9273.65) = 8.00, p < .001; Wilk's Lambda = .973; partial η^2 = .009; a small effect) and at level 2 (F(9, 406.59) = 2.65, p = .005; Wilk's Lambda = .870; partial η^2 = .045; a medium effect). Univariate

test results for each of the dependent variables were all significant, with the one exception of negative affect. Results are shown in Table 9.

Table 9

Univariate Test Results Comparing OTH Median Split Group Means

	Well-being measure	*F*-test	Sig	Partial η²
Level 2	Life satisfaction	$F(3, 169) = 6.33$	.000	.101
	Positive affect	$F(3, 169) = 3.56$	.016	.059
	Negative affect	$F(3, 169) = 1.32$	.270	.023
Level 1	Pleasure	$F(3, 3508) = 13.29$	.000	.011
	Meaning	$F(3, 3508) = 24.61$	.000	.021
	Engagement	$F(3, 3508) = 18.92$	.000	.016
	Happiness	$F(3, 3508) = 9.78$	.000	.008

Visual inspection of the group means revealed that scoring above the median on more OTH domains was associated with higher well-being across nearly all dimensions. Linear trend analyses revealed significant trends across all well-being variables, with only negative affect failing to reach significance. Trends remained significant if age was included as a covariate.

Figure 5 shows means plots for OTH group scores on level 2 trait SWB dimensions. Figure 6 shows means plots for OTH groups on average momentary ratings of pleasure, meaning, engagement, and happiness.
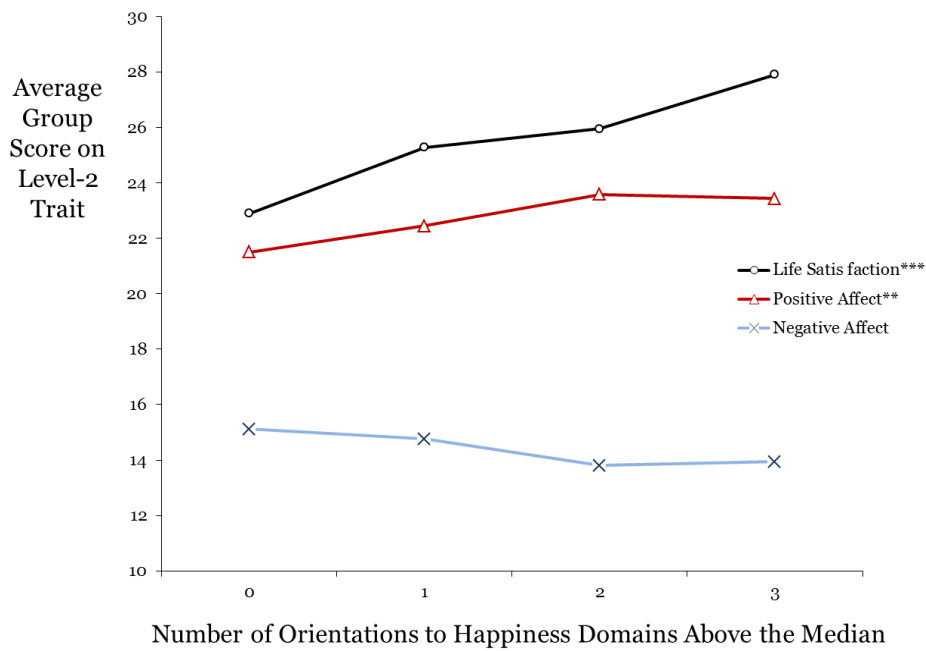
Figure 5. Orientation to happiness median-split group scores on average life satisfaction, positive affect, and negative affect. Those participants with more OTH domains above the median had higher life satisfaction and reports of positive affect (negative affect linear trend was ns; $p = .097$; ** $p \leq .01$, *** $p \leq .001$).
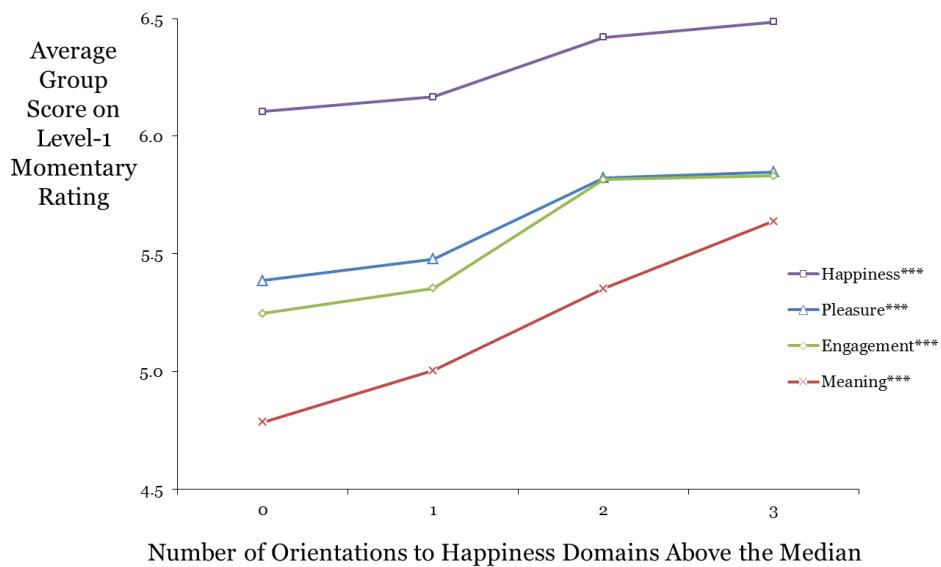

Figure 6. Orientation to happiness median-split group scores on average momentary pleasure, meaning, engagement, and happiness. Those participants with more OTH domains above the median had higher average momentary ratings of daily activities. All linear trends; *** $p \leq .001$.

For every well-being measure except negative affect there was a significant linear trend of increasing well-being with more OTH domains above the median. The full life hypothesis was therefore supported in this study—not only at the level of SWB—but also at the level of everyday daily experience. These findings replicated earlier work by Huta and Ryan (2010) who also used SWB measures, in addition to carefreeness, meaning, elevating experience, and vitality. However, in their experience sampling study, Huta and Ryan found that the full life was only significantly higher than the empty life in elevating experience and vitality (p. 751).

The results of the current study offer several extensions to earlier work. The full life was supported using the OTH domains as momentary rating dependent variables. Additionally, the results show how the more OTH domains one has above the median—regardless of which domains they are—the higher one tends to score on trait and momentary well-being. This supports the idea of an 'additive effect' of having more ways to seek happiness. The implication of the full life hypothesis and other findings from this study are summarised and discussed in the following section.

Chapter 4: Discussion

Summary of Results

This study examined Peterson et al.'s (2005) OTH theory using an experience sampling methodology. Participants completed an online questionnaire at time 1 that assessed their SWB, OTH endorsement, and personality characteristics. Participants then replied to three text-messages per day for seven consecutive days, after which they completed the online measures again at time 2.

This research had three exploratory aims and two formal hypotheses. The first aim was to identify the relationships between the three OTH domains and Big Five personality dimensions. Extraversion was correlated with all three OTH domains, most strongly with pleasure. Agreeableness was correlated with meaning, emotional stability was correlated with engagement, and openness to experience was correlated with pleasure and engagement. Conscientiousness was not correlated with any OTH domain to within significance. Replication of the regression analyses by Vella-Brodrick et al. (2009) explained more variance in life satisfaction and negative affect in this study, but less variance in positive affect. When controlling for personality traits, engagement accounted for variance in life satisfaction and pleasure accounted for variance in positive affect, but in both cases emotional stability was a stronger predictor.

The second aim identified the composition of momentary ratings of daily activities on pleasure, meaning, engagement, and happiness. Daily activities were found to be a blend of hedonic and eudaimonic characteristics, with some behaviours being high on hedonia but low on eudaimonia and vice versa.

The third aim identified the magnitude of differences between highest scored OTH domains and the next highest OTH domains—termed OTH 'dominance'. What made one OTH domain dominant was the endorsement of on average just under half a Likert scale point more on each of the six items making up the scale than the next highest domain.

The hypothesis that dominant OTH would predict engaging in difference activities was not supported. A revised 'type of life' hypothesis—that OTH would influence how different behaviours were experienced—was partially supported. Orientation to

happiness domains were found to be associated with ratings of daily behaviours on the momentary dimensions across all behaviour categories. When looking at specific behaviours, there was inconsistent evidence supporting the idea that OTH domains influenced the momentary experience of activities; those higher on an orientation to pleasure rated going to lectures as less pleasurable and engaging. They conversely rated relaxing as more pleasurable and engaging. Higher orientations to meaning and engagement were related to higher ratings of work activities.

The hypothesis that those with the full life would also rate their daily experiences higher on momentary well-being was supported. There was a significant linear trend found for every well-being dimension except negative affect indicating that the more OTH domains one has above the median, the higher one scores on well-being. The full life hypothesis therefore is supported at the level of everyday activity.

General Discussion

As the opening quotation of this thesis indicated, wanting to be happy does not itself seem to be a particularly complicated desire. However, the *pursuit of happiness* in our everyday lives is anything but simple and straight-forward. The following discussion considers the findings and implications of the current research for what can be done in order to increase one's well-being in the pursuit of the full life. Several avenues for future investigation to advance the field of OTH research are offered before discussing limitations, methodological issues, and strengths of the current research.

Orientations to Happiness, Personality, and Subjective Well-Being

This study investigated the ability of OTH to explain variance in SWB when controlling for personality. This provided a direct replication to the study by Vella-Brodrick et al. (2009), in addition to extending previous research by identifying the relationships between OTH and the Big Five. Overall, when considering the results of Vella-Brodrick et al. and of the current study, the OTH domains do contribute some additional explanatory variance to SWB beyond personality, but this is small. Including the OTH domains in addition to personality contributed an additional 7.4% of explained variance in life satisfaction. Including the OTH domains in the full

model regressions did not explain any additional variance in positive affect or negative affect to within significance.

Some questions remain outstanding from this and earlier studies, particularly what the three-way relationships are between personality, OTH, and SWB. Future studies could investigate this in much the same way as Haslam et al. (2009) investigated personality, values and SWB. This investigation may reveal how much of the relationship between OTH and SWB is associated with shared variance in the Big Five. Personality variables are clearly powerful predictors of SWB that do not necessarily have direct relationships with OTH domains. For example, emotional stability was correlated with engagement, but not with pleasure or meaning, and it was the strongest correlate of life satisfaction of the Big Five traits. Emotional stability was also the strongest predictor of all the SWB variables in the full regression models. Neuroticism has previously been found to be a particularly strong predictor of life satisfaction (for example in the meta-analysis by DeNeve & Cooper, 1998) and a wide range of research has explored the connections between personality and life outcomes (Funder, 2010).

Despite the robustness of personality to predict SWB, there is nevertheless some advantage in thinking in terms of OTH for the benefit of pursuing higher well-being. OTH theory adds value to the discussion surrounding well-being because of its *explanatory coherence* (Thagard, 1993). In the field of personality research, for example, type distinctions make it easier to think about complex subject matter (Funder, 2010). The same is true for OTH theory. A particular benefit of the OTH theory is that it allows for the identification of areas where positive psychology interventions could be brought to bear in order to raise well-being. One question that will need future research effort is whether people are able to change their orientation to happiness. Another area for consideration is how to go about 'balancing one's happiness portfolio' in order to achieve the full life.

Can People Change Their Orientation to Happiness?

An important question is whether people are able to change their orientation to happiness. Here there seems to be some conflicting evidence. Both the current study and that by Ruch et al. (2010) found that trait OTH was stable over time (albeit only over 13 days in the current study). However, as people age they naturally become

more inclined to pursue a eudaimonic orientation. Steger, Oishi, and Kashdan (2009) found that older people generally have higher degrees of meaning in their lives, while younger people report more searching for meaning. The current study also found that older participants had higher endorsements of orientation to meaning than younger participants.

Additionally, there is evidence that people can indeed become happier. As previously discussed, the meta-analysis of PPIs by Sin and Lyubomirsky (2009) makes it clear that interventions can help to increase well-being and decrease depressive symptoms—however, this is different to actual trait change. Research from the field of personality can perhaps lend some insight into the stability of traits over the life-course. On the whole, the idea that personality is essentially 'fixed' from early adulthood has been challenged (Funder, 2010). Srivastava, John, Gosling, and Potter (2003) investigated the 'set like plaster' hypothesis that personality does not change after age 30 in a large internet sample in the US (N = 132,515). All Big Five dimensions continued to show significant change in systematic ways over the lifespan; conscientiousness increased, as did agreeableness, while neuroticism and openness declined. Extraversion declined for women but not for men. The results suggest that personality traits are not fixed, at least not over the life-span. This does not, however, address whether it is possible to deliberately change traits like OTH and future research should investigate if this is possible.

Pursuing the Full Life

Even if people are unable to shift their trait orientation, there is still the ability to conduct activities which may lead to the full life. In accordance with the full life hypothesis, in order to maximise well-being, people should endeavour to pursue activities that help to 'balance their happiness portfolio'. This means ensuring that sufficient attention is paid to pursuing pleasurable activities, meaningful activities, and highly engaging activities.

For healthcare providers, counsellors, coaches, and others wellness practitioners, one way to help people achieve the full life is by identifying the OTH domain clients and patients are weakest at pursuing. Positive psychology interventions could then be applied to aid with increasing attention to that area of relative weakness. As previously discussed, there is a growing body of work that provides evidence for the

efficacy and effectiveness of PPIs. There are also PPIs that address the central themes of each OTH domain in order to raise levels of pleasure, meaning, and engagement.

One way of increasing pleasure is through practicing savouring. Bryant, Smart, and King (2005) have proposed that savouring is an important regulatory mechanism for increasing the enjoyment of positive experiences in life. Several studies have investigated positive reminiscing and savouring as mechanisms for increasing happiness (Bryant, Smart, & King, 2005; Jose, Lim, & Bryant, 2012). Jose, Lim, and Bryant found that increased savouring both moderated and mediated the influence of positive experiences on momentary happy mood. Savouring has also been shown to significantly decrease negative affect and depressive symptoms when compared to a control group (Hurley & Kwon, 2011).

Interventions are now also being explored to assist people in creating meaning out of life events and to increase the sense of meaning in their lives. Lee, Robin Cohen, Edgar, Laizner, and Gagnon (2006) investigated the efficacy of a meaning-making intervention (MMi) to raise well-being in cancer patients. The intervention involved structured tasks which required participants to reflect and discuss their experiences and mortality. Compared to controls, those in the MMi group experienced more self-esteem, self-efficacy, and optimism than those in the control group at follow-up. Similarly, Westerhof, Bohlmeijer, Van Beljouw, and Pot (2010) tested a meaning intervention in a group of older adults (age > 51 years) using a life-review intervention, which consisted of 12 structured sessions focussed on creating meaning from past events. The presence of meaning in the lives of participants was tested for using a sentence completion task that was then rated for the presence of meaning. Compared to controls, those in the intervention group improved their personal meaning and this was maintained at 6-month follow-up. This was also associated with a decline in depressive symptoms. Meaning, therefore, has been shown to be malleable to improvement in people's lives, and increasing meaning can be one avenue towards achieving the full life.

Encouraging people to experience more flow states is an avenue to increase the amount of engagement present in people's lives. Some of the central features of flow include the balance of challenge versus skill as well as the intrinsic enjoyment that comes from using skills and talents while conducting an activity (Hefferon & Boniwell, 2011). Therefore, using strengths of character more frequently can be one

way to influence the experience of more engagement. Using signature strengths in new ways has previously been investigated as an intervention by Seligman et al. (2005). Compared to placebo controls, the intervention was found to increase happiness and decrease depressive symptoms at one, three and six month follow-up.

Of course, engaging in activities as a way of increasing one's happiness and well-being is hardly a new idea. Behavioural activation has been used by clinicians for decades as an intervention to get those with depression moving toward positive activities (Spiegler & Guevremont, 2010). A study has also found that behavioural activation was by itself *as effective* at alleviating depression as the full complement of cognitive behavioural therapy (CBT; Jacobson et al., 1996). As discussed in the introduction, while 50 percent of the variance in our happiness is believed to be linked to our genetics, it is believed that 40 percent is under direct influence through intentional activities (Lyubomirsky et al., 2005). In particular, *varied activity* is important as it helps to counteract hedonic adaptation (Hefferon & Boniwell, 2011; Lyubomirsky et al., 2005). Doing things, therefore, is a good way to become happier, and PPIs provide focus and a framework for targeting activities that contribute to the full life.

The Hedonic and Eudaimonic Composition of Daily Activity

The current study identified that daily events are comprised of a blend of experienced pleasure, meaning, and engagement. Surprisingly few studies support this type of finding, but there are nonetheless some important implications that follow for how we pay attention to our daily well-being.

White and Dolan (2009) found that daily behaviours were similarly comprised of blended activities. The authors used a methodology similar to the day reconstruction method (DRM; Kahneman et al., 2004) where participants rated their previous day's episodes on emotional content and how much each episode was worthwhile. A pleasure and reward rating scale was subsequently calculated for each daily behaviour category[4] with each behaviour displaying a composition of both pleasure and reward scores. White and Dolan emphasised the importance for public policy of not just focusing on the hedonic aspects of daily activities when attempting to assess

---

[4] The behavioural categories used by White and Dolan helped to inform the methodology in this study, see annex C.

their value (p. 1006). The point that activities can be thought of as multi-faceted is important, and this perspective encourages seeing value in even the most mundane of everyday activities.

The concept of blended activities, while perhaps new to positive psychology, is not new to clinical psychology. The mastery and pleasure rating intervention used by clinicians has been shown to be effective at focusing clients' attention on different aspects of their behaviour which would otherwise be ignored. Mastery and pleasure ratings are used during the therapeutic process as empirical evidence to refute client maladaptive generalisations that nothing is enjoyable or achievable. These interventions are designed to encourage clients to pay attention to partial accomplishments and small pleasures (Manos, Kanter, & Busch, 2010; Spiegler & Guevremont, 2010).

Despite some of the seemingly unpleasant aspects of daily life in the current study, there was still evidence of positive aspects contained within many activities, either through relatively high meaning, or relatively high engagement ratings. One alternative route to increasing daily well-being highlighted in the current research, therefore, perhaps lies not necessarily in engaging in different activities, but simply in paying more attention to different aspects of the activities that are *already being carried out*. Indeed, Killingsworth and Gilbert (2010) have found in their smartphone experience sampling study that people are less happy when their mind is wandering and not focused on what they are doing, regardless of activity type. Therefore, mindfulness interventions or any other types of attention exercises (e.g. those practised during REBT; Ellis, 2006) could be profitably employed to bring more awareness to the blended aspects of daily experience.

The Richness and Diversity of Daily Experiences

One area of the current study that deserves highlighting is the richness apparent in everyday activities. Some texts spoke to the highs of life for some people, for example "Performing burlesque on stage, with 300 others :-) 9, 9, 9, 9". By contrast, some messages also spoke to the lows of life, such as "At home finding out details on how my aunt will die in two weeks, with sister and mum, 1771". Some messages were received which were perhaps idiosyncratic to the location of the current study, for

example "Trying not to poo myself after that 5.2 quake at work, with my manager, 2284"—reflective of Christchurch's recently shifting tectonic characteristics.

Other messages spoke all too clearly of the human drama playing out within even the most routine of daily activities, for example "Driving to uni. My daughter. Stressfull. Sad 1711", and "At home depressed. Myself. Meaningless self pity.1 1 1 1". Messages were occasionally introspective, reflecting an awareness of the inherent value of the activity, "Watchn tv with a friend. Not engaging waste of a day 2222". Messages also occasionally provided reminders that activities themselves are only partial contributors to one's momentary experience, such as the low pleasure rating of otherwise 'enjoyable' behaviours reflected in messages such as "I am at a 21st with about forty friends, 2645".

As highlighted by the above examples, text-messages often contained rich information which could benefit from qualitative analysis in future research designs. Qualitative methods remain underutilised in psychology, often relegated to the "margins" of mainstream research (Haig, 2006, p. 150). Perhaps more evidence for the type of life hypothesis would be found by adopting qualitative research methods that allow for an investigation into differences that are "not a matter of degree but of kind" (Funder, 2010, p. 253).

Limitations and Methodological Considerations

There are several limitations and methodological considerations arising from the current research, particularly concerning the length of the sampling period, reactivity, the characteristics of the sample, and the behavioural coding methodology.

Length of the Study

It is possible that seven consecutive days was an insufficient amount of time to gather a representative sample of the daily lives of the participants in this study. A longer period of time may have revealed more differences in activities by different dominant OTH. Some of the chi-square test results may have become significant with a larger sampling of responses, particularly paid work (p = .147), socialising (p = .149), and sleeping/resting (p = .125). Also, only those behaviours with over 100 instances in this study were tested for differences in frequency by OTH dominance.

The seven consecutive day experience sampling period was however equivalent to that used by Huta and Ryan (2010), although these authors used seven sampling points within each day compared to the three sampling points used in this study. Having a longer experience sampling period would allow for a greater number of behavioural instances which may provide supportive conditions for testing the type of life hypothesis.

Additionally, ESM is also perhaps not the right tool for investigating the type of life hypothesis. ESM inherently misses points between periodic samplings and rare events are unlikely to be captured (Scollon et al., 2003). It is possible that the type of life people lead is sensitive to rare events outside of everyday activities that are potentially being missed by ESM sampling protocols. Using the DRM over a representative period of time may be more appropriate method for thoroughly investigating the type of life hypothesis.

Reactivity

Reactivity is where participant behaviour changes as a result of being aware that their behaviour is being assessed (Spiegler & Guevremont, 2010). As discussed earlier, the mastery and pleasure rating intervention has been successful in producing well-being increases in clinical contexts by getting clients to focus on aspects of their daily lives. It is therefore perhaps unsurprising that the current study procedure itself may have had an effect on participant well-being. Consistently requiring participants to make assessments about their daily activities encourages participants to notice things about their behaviour that they may have otherwise overlooked. The procedure required participants to rate their current activity on pleasure, meaning, and engagement, which is very similar to the mastery and pleasure ratings used in CBT. However, while there was a trend of people becoming slightly happier over time, this did not reach the level of significance. Orientation to engagement was found to moderate the effect of time on momentary happiness ratings, meaning that people with higher orientations to engagement tended to get happier over time than those with a low endorsement of engagement. For orientations to pleasure there was a trend only. Conner and Reid (2011) did not find any evidence of unqualified reactivity, but did find moderation effects for depression and neuroticism. These effects were not found in this study. Nevertheless, there were

some indications that orientations to happiness may moderate the effect of daily happiness reporting. A future study could adopt the same paradigm used by Conner and Reid to investigate if the number of daily prompts (i.e. the number to text-messages each participant responds to) has an effect on the moderating effect of OTH.

Sample Characteristics

Efforts were made to recruit participants from a wide variety of locations using Facebook and placing flyers in locations other than on college campuses. The sample nevertheless reflected predominantly university-aged participants. In spite of this, there was a sufficient age-range to identify a relationship between age and orientation to meaning. The sample was also overwhelmingly female, reflecting the well-known phenomenon in psychology research that samples tend to be comprised of mainly women and "unusual men" (Funder, 2010, p. 76). Additionally, Scollon et al. (2003) note that being a participant in an ESM study can be an onerous and intrusive activity, therefore perhaps only those with certain characteristics self-select to participate in the research (e.g. being relatively high on conscientiousness or agreeableness, or unusually high in motivation). These factors obviously highlight the unrepresentative nature of the sample and limit the generalizability of the results of this study.

Coding Methodology

There are some considerations associated with the methodology used to code the diverse data-set of over three and a half thousand text-messages. The rating scheme used for coding was robust and allowed for high agreement between raters on both the behavioural and social categories. However, there was likely noise in the data-set as an artefact of the coding procedure as this was inevitably an imperfect process. Additionally, much rich qualitative information was lost in the translation from naturally occurring qualitative data to analysable quantitative data.

The most challenging daily situations to classify were those involving eating, drinking, and socialising. This was because these activities often resembled one another, or were a combination of two or three behaviours which were impossible to tell apart from just the contents of a short text-message. Some messages were easy to

identify as one category, for example eating alone versus going out for dinner (coded as socialising). Coffee with a friend was almost always coded as a social behaviour as opposed to an eating or drinking behaviour. Socialising captured the widest variety of behaviours, for example, going to a concert, drinking coffee, going out for dinner, hanging out and chatting, or skyping with a friend or family member. It is difficult to see how there could be any agreement on the amount of pleasure, meaning, or engagement—not to mention happiness—amongst such a range of seemingly disparate behaviours. Consequently, there was often not a clear, distinctive, and discrete separation between many of the coding categories. This increased the likelihood that there were overlapping characteristics in the categories used and quite likely therefore that there was noise in the final coded data-set.

Strengths of the Current Study

In their critique of modern psychology and its use of questionnaires and reaction-time tests, Baumeister, Vohs, and Funder (2007) lament the lack of direct observation of actual behaviour in the preponderance of personality and social psychological studies. This research was sensitive to that criticism and therefore endeavoured to capture actual participant behaviour as closely as possible. However, it is acknowledged that even in this study, behaviour reports were still self-reports (as noted also by Steger, Kashdan, & Oishi, 2008, pp. 38).

Nevertheless, there are several advantages that come from adopting this paradigm. Firstly, as evidenced in the short durations between sent messages and replies, there was very little opportunity for recall bias to negatively influence responding. Just under half of all messages were received within five minutes and most messages were received within an hour. These times are more likely reflective of the time it took to notice that participants had received a message, rather than being associated with recall bias. The procedure required participants to state what they were doing "right now", which deliberately encouraged here and now reporting rather than retrospective recall.

Secondly, there is evidence to suggest that the procedure was a valid methodology for getting at actual behaviour. The apparent honesty of the messages that were received provided assurance that participants were taking the study seriously. For example, activities that could possibly be perceived as socially undesirable or

stigmatised were routinely received, such as "Drinking and playing drinking games. Flat mates. 6566". Also, highly personal activities were also disclosed, for example "Having sex. Paul. Very nice. Happy 8788". Replies such as these lend confidence in the validity of the overall study procedure. Finally, unlike other studies that have asked participants for higher order cognitive introspections into their behaviour, this study asked only for ratings of what people were already doing. In this way, there was no requirement to rely on participants' ability to be clear about their underlying motives.

Future Research

This study identified a way to operationalize OTH dominance using within-participant z-scores, and future research can adopt this methodology to further investigate dominant OTH. It is possible that the *magnitude of the strength* of a dominant OTH domain is important in determining the 'type of life' that people pursue.

The field of OTH research should also address the issue of equal endorsement of two of more OTH domains. In the current study this included three percent of the sample, but this may represent a special case of individuals. Rather than discarding those participants from analysis (as was the case in this study) future research could focus on the well-being of this category of individual compared to those who only have one dominant OTH domain.

Conclusion

Supporters of positive psychology have as one of their aims the return of the discipline to a more balanced science of human strengths and weaknesses (Seligman et al., 2004). A rise in the academic literature of hedonic and eudaimonic research preferences has seen attempts to dichotomise behaviours as either pleasure-seeking or eudaimonia-seeking. However, the results from this study and others (e.g. White & Dolan, 2009) demonstrate that everyday behaviours are best thought of as a blend of hedonic and eudaimonic experience. Orientation to happiness theory proposed by Peterson et al. (2005) suggests there are three distinct ways of pursuing happiness and that each one of us has a preferred orientation. While dominant orientations

were identified within participants in this study, there was no evidence that dominant OTH influenced engaging in different behaviours.

Nevertheless, OTH theory holds considerable value as a framework for thinking about well-being and about what daily activities can be pursued to increase everyday pleasure, meaning, and engagement. Positive psychology research now offers many interventions which can help people derive more pleasure from their daily activities, find more meaning in their lives, and encourage people to experience more flow and engagement. The results from this study suggest that attention to all three orientations to happiness is a way to balance one's well-being portfolio. Increased happiness and well-being, therefore, is a realistic goal for many people, and this study contributes to the research effort aimed at helping people achieve the full life.

> "Happiness is not something ready-made. It comes from your own actions".

> - Dalai Lama

Atz, U. (2013). Evaluating experience sampling of stress in a single-subject research design. *Personal and Ubiquitous Computing*, *17*(4), 639–652. doi:10.1007/s00779-012-0512-7

Banth, S., & Talwar, C. (2012). Anasakti, the Hindu ideal, and its relationship to well-being and orientations to happiness. *Journal of Religion and Health*, *51*(3), 934–946. doi:10.1007/s10943-010-9402-3

Baumeister, R. F., Vohs, K. D., & Funder, D. C. (2007). Psychology as the science of self-reports and finger movements: Whatever happened to actual behavior? *Perspectives on Psychological Science*, *2*(4), 396–403. doi:10.1111/j.1745-6916.2007.00051.x

Biswas-Diener, R., Kashdan, T. B., & King, L. A. (2009). Two traditions of happiness research, not two distinct types of happiness. *The Journal of Positive Psychology*, *4*(3), 208–211. doi:10.1080/17439760902844400

Bradburn, N. (1969). *The structure of psychological well-being*. Chicago: Aldine.

Bryant, F. B., Smart, C. M., & King, S. P. (2005). Using the past to enhance the present: Boosting happiness through positive reminiscence. *Journal of Happiness Studies*, *6*(3), 227–260. doi:10.1007/s10902-005-3889-4

Bryant, F., & Veroff, J. (2007). *Savoring: A new model of positive experience*. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Colander, D. (2007). Edgeworth's Hedonimeter and the quest to measure utility. *Journal of Economic Perspectives*, *21*(2), 215–225.

Conner, T. S., & Reid, K. A. (2011). Effects of intensive mobile happiness reporting in daily life. *Social Psychological and Personality Science*, *3*(3), 315–323. doi:10.1177/1948550611419677

Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety: The experience of play in work and games*. San Francisco: Jossey-Bass Publishers.

Csikszentmihalyi, M., & Csikszentmihalyi, I. S. (1992). *Optimal experience: Psychological studies of flow in consciousness*. Cambridge University Press.

Csikszentmihalyi, Mihaly, Larson, R., & Prescott, S. (1977). The ecology of adolescent activity and experience. *Journal of Youth and Adolescence*, *6*(3), 281–294. doi:10.1007/BF02138940

Cummins, R. A. (2009). Subjective wellbeing, homeostatically protected mood and depression: A synthesis. *Journal of Happiness Studies*, *11*(1), 1–17. doi:10.1007/s10902-009-9167-0

De Botton, A. (2001). *The consolations of philosophy*. London, England: Penguin Books.

DeNeve, K. M., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin, 124*(2), 197–229. doi:10.1037/0033-2909.124.2.197

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 542–575. doi:10.1037/0033-2909.95.3.542

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71-75.

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research, 97*(2), 143–156. doi:10.1007/s11205-009-9493-y

Edgeworth, F. (1881). *Mathematical psychics: An essay on the application of mathematics to the moral sciences*. New York: AM Kelley.

Ellis, A. (2006). Rational emotive behavior therapy and the mindfulness based stress reduction training of Jon Kabat-Zinn. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 24*(1), 63–78. doi:10.1007/s10942-006-0024-3

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*(3), 218–226.

Funder, D. C. (2010). *The personality puzzle* (5th ed.). New York, N.Y: W. W. Norton & Company.

Giannopoulos, V. L., & Vella-Brodrick, D. A. (2011). Effects of positive interventions and orientations to happiness on subjective well-being. *Journal of Positive Psychology, 6*(2), 95–105. doi:10.1080/17439760.2010.545428

Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*(6), 504–528. doi:10.1016/s0092-6566(03)00046-1

Haig, B. D. (2006). Qualitative methods: A realist perspective. *Proceedings of the 2006 Joint Australian and New Zealand Psychological Societies' Conference* (pp. 150–154).

Haslam, N., Whelan, J., & Bastian, B. (2009). Big Five traits mediate associations between values and subjective well-being. *Personality and Individual Differences, 46*(1), 40–42. doi:10.1016/j.paid.2008.09.001

Hefferon, K., & Boniwell, I. (2011). *Positive psychology: Theory, research and applications*. England: McGraw-Hill.

Hurley, D. B., & Kwon, P. (2011). Results of a study to increase savoring the moment: Differential impact on positive and negative outcomes. *Journal of Happiness Studies*, *13*(4), 579–588. doi:10.1007/s10902-011-9280-8

Huta, V., & Ryan, R. M. (2010). Pursuing pleasure or virtue: The differential and overlapping well-being benefits of hedonic and eudaimonic motives. *Journal of Happiness Studies, 11*(6), 735–762. doi:10.1007/s10902-009-9171-4

Jacobson, N. S., Dobson, K. S., Truax, P. A., Addis, M. E., Koerner, K., Gollan, J. K., Gortner, E., et al. (1996). A component analysis of cognitive-behavioral treatment for depression. *Journal of Consulting and Clinical Psychology*, *64*(2), 295–304.

Jose, P. E., Lim, B. T., & Bryant, F. B. (2012). Does savoring increase happiness? A daily diary study. *The Journal of Positive Psychology*, *7*(3), 176–187.

Kahneman, D. (2010). Daniel Kahneman: The riddle of experience vs. memory. [Video file]. Retrieved from http://www.youtube.com/watch?v=XgRlrBl-7Yg

Kahneman, D. (2011). *Thinking, fast and slow*. New York: Farrar, Straus and Giroux.

Kahneman, D., Fredrickson, B. L., Schreiber, C. A., & Redelmeier, D. A. (1993). When more pain is preferred to less: Adding a better end. *Psychological Science*, *4*(6), 401–405. doi:10.1111/j.1467-9280.1993.tb00589.x

Kahneman, D., Krueger, A. B., Schkade, D. A., Schwarz, N., & Stone, A. A. (2004). A survey method for characterizing daily life experience: The day reconstruction method. *Science*, *306*(5702), 1776–1780. doi:10.1126/science.1103572

Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. *The Journal of Positive Psychology*, *3*(4), 219–233. doi:10.1080/17439760802303044

Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, *43*(2), 207–22.

Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly*, *61*(2), 121–140.

Killingsworth, M. A., & Gilbert, D. T. (2010). A wandering mind is an unhappy mind. *Science*, *330*(12), 79.

Lee, V., Robin Cohen, S., Edgar, L., Laizner, A. M., & Gagnon, A. J. (2006). Meaning-making intervention during breast or colorectal cancer treatment improves self-esteem, optimism, and self-efficacy. *Social Science & Medicine*, *62*(12), 3133–45. doi:10.1016/j.socscimed.2005.11.041

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, *9*(2), 111–131. doi:10.1037/1089-2680.9.2.111

MacKerron, G., & Mourato, S. (2011). Mappiness: Quantifying wellbeing in relation to environment across space and time. Rome: European Association of Environmental and Resource Economists. Retrieved from http://www.webmeets.com/EAERE/2011/prog/viewpaper.asp?pid=767

Manos, R. C., Kanter, J. W., & Busch, A. M. (2010). A critical review of assessment strategies to measure the behavioral activation model of depression. *Clinical Psychology Review*, *30*(5), 547–61. doi:10.1016/j.cpr.2010.03.008

Mary, J. (2010). Positive psychology for career counselors. *Career Planning and Adult Development Journal*, *26*(1), 26.

Maslow, A. H. (1954). *Motivation and personality*. New York, N.Y: Harper & Row.

Maslow, A. H. (1968). *Toward a psychology of being*. New York, N.Y: J. Wiley & Sons.

McCullough, M. E., & Snyder, C. R. (2000). Classical sources of human strength: Revisiting an old home and building a new one. *Journal of Social and Clinical Psychology*, *19*(1), 1–10. doi:10.1521/jscp.2000.19.1.1

Miller, G. (2012). The smartphone psychology manifesto. *Perspectives on Psychological Science*, *7*(3), 221–237. doi:10.1177/1745691612441215

Moskowitz, A. D. S., Brown, K. W., Côté, S., & Moskowitz, D. S. (1997). Reconceptualizing stability: Using time as a psychological dimension. *Current Directions in Psychological Science*, *6*(5), 127–132.

Nezlek, J. B. (2001). Multilevel random coefficient analyses of event-and-interval-contingent data in social and personality psychology research. *Personality and Social Psychology Bulletin*, *27*(7), 771–785. doi:10.1177/0146167201277001

Nezlek, J. B. (2003). Using multilevel random coefficient modeling to analyze social interaction diary data. *Journal of Social and Personal Relationships*, *20*(4), 437–469. doi:10.1177/02654075030204002

Nezlek, J. B. (2007). A multilevel framework for understanding relationships among traits, states, situations and behaviours. *European Journal of Personality*, *21*(6), 789–810. doi:10.1002/per.640

Nisbett, R., & Wilson, T. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, *84*(3), 231–259.

Park, N., Peterson, C., & Ruch, W. (2009). Orientations to happiness and life satisfaction in twenty-seven nations. *The Journal of Positive Psychology*, *4*(4), 273–279. doi:10.1080/17439760902933690

Park, N., Peterson, C., & Seligman, M. E. P. (2006). Character strengths in fifty-four nations and the fifty US states. *The Journal of Positive Psychology*, *1*(3), 118–129. doi:10.1080/17439760600619567

Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment*, *5*(2), 164–172. doi:10.1037/1040-3590.5.2.164

Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life satisfaction. *The Journal of Positive Psychology*, *3*(2), 137–152. doi:10.1080/17439760701756946

Peterson, C., Park, N., & Seligman, M. E. P. (2005). Orientations to happiness and life satisfaction: The full life versus the empty life. *Journal of Happiness Studies*, *6*(1), 25–41. doi:10.1007/s10902-004-1278-z

Peterson, C., Ruch, W., Beermann, U., Park, N., & Seligman, M. E. P. (2007). Strengths of character, orientations to happiness, and life satisfaction. *The Journal of Positive Psychology*, *2*(3), 149–156. doi:10.1080/17439760701228938

Peterson, C., & Seligman, M. E. P. (2004). *Character Strengths and Virtues: A Handbook and Classification*. Oxford University Press.

Pirsig, R. (1974). *Zen and the art of motorcycle maintenance*. New York, N.Y: William Morrow and Company.

Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., Congdon, R. T., & Du Toit, M. (2011). *HLM 7 for Windows*. Skokie, IL: Scientific Software International, Inc.

Robinson, J. P., & Godbey, G. (1997). *Time for life: The surprising ways Americans use their time*. University Park, PA: Pennsylvania State University Press.

Ruch, W., Harzer, C., Proyer, R. T., Park, N., & Peterson, C. (2010). Ways to happiness in German-speaking countries. *European Journal of Psychological Assessment*, *26*(3), 227–234. doi:10.1027/1015-5759/a000030

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, *52*(1), 141–166. doi:10.1146/annurev.psych.52.1.141

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069–1081. doi:10.1037//0022-3514.57.6.1069

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*.

Schwarz, N., & Strack, F. (1999). Reports of subjective well-being: Judgmental processes and their methodological implications. In Kahneman, D., Diener, E., & Schwarz, N. (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 61–84). New York: Russell Sage Foundation.

Scollon, C. N., Kim-Prieto, C., & Diener, E. (2003). Experience sampling: Promises and pitfalls. *Journal of Happiness Studies*, *4*, 5–34.

References

Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York: Free Press.

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*(1), 5.

Seligman, M. E. P., Parks, A. C., & Steen, T. (2004). A balanced psychology and a full life. *Philosophical Transactions of the Royal Society of London., 359*(1449), 1379–81. doi:10.1098/rstb.2004.1513

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *The American Psychologist, 60*(5), 410–21. doi:10.1037/0003-066X.60.5.410

Sin, N. L., & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of Clinical Psychology, 65*(5), 467–487. doi:10.1002/jclp.20593

Spiegler, M. D., & Guevremont, D. C. (2010). *Contemporary behavior therapy* (5th ed.). Belmont, CA: Wadsworth Cengage Learning.

Srivastava, S., John, O. P., Gosling, S. D., & Potter, J. (2003). Development of personality in early and middle adulthood: Set like plaster or persistent change? *Journal of Personality and Social Psychology, 84*(5), 1041–1053. doi:10.1037/0022-3514.84.5.1041

Steger, M. F., Kashdan, T. B., & Oishi, S. (2008). Being good by doing good: Daily eudaimonic activity and well-being. *Journal of Research in Personality, 42*(1), 22–42. doi:10.1016/j.jrp.2007.03.004

Steger, M. F., Oishi, S., & Kashdan, T. B. (2009). Meaning in life across the life span: Levels and correlates of meaning in life from emerging adulthood to older adulthood. *The Journal of Positive Psychology, 4*(1), 43–52. doi:10.1080/17439760802303127

Strack, F., Martin, L. L., & Schwarz, N. (1988). Priming and communication: Social determinants of information use in judgments of life satisfaction. *European Journal of Social Psychology, 18*(5), 429–442. doi:10.1002/ejsp.2420180505

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed). Boston: Pearson Education.

Thagard, P. R. (1993). Explanatory coherence. *Readings in philosophy and cognitive science* (pp. 153–184). Cambridge, Mass: MIT Press.

Tilson, C. (2006). *Positive psychology and psychotherapists*. [Dissertation]. Retrieved from http://psycnet.apa.org/psycinfo/2007-99004-021/

Tukey, J. W. (1980). We need both exploratory and confirmatory. *The American Statistician*, *34*(1), 23–25.

Vella-Brodrick, D. a. DA, Park, N., & Peterson, C. (2009). Three ways to be happy: Pleasure, engagement, and meaning—findings from Australian and US samples. *Social Indicators Research*, *90*(2), 165–179. doi:10.1007/s11205-008-9251-6

Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, *64*(4), 678–691. doi:10.1037//0022-3514.64.4.678

Waterman, A. S. (2008). Reconsidering happiness: A eudaimonist's perspective. *The Journal of Positive Psychology*, *3*(4), 234–252. doi:10.1080/17439760802303002

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063–70.

Westerhof, G. J., Bohlmeijer, E. T., Van Beljouw, I. M. J., & Pot, A. M. (2010). Improvement in personal meaning mediates the effects of a life review intervention on depressive symptoms in a randomized controlled trial. *The Gerontologist*, *50*(4), 541–9. doi:10.1093/geront/gnp168

White, M. P., & Dolan, P. (2009). Accounting for the richness of daily activities. *Psychological Science*, *20*(8), 1000–1008. doi:10.1111/j.1467-9280.2009.02392.x

Wilson, T., & Stone, J. (1985). Limitations of self-knowledge: More on telling more than we can know. *Review of Personality and Social Psychology*, *6*(1), 167-183.

Wong, P. T. P. (2011). Positive psychology 2.0: Towards a balanced interactive model of the good life. *Canadian Psychology/Psychologie Canadienne*, *52*(2), 69–81. doi:10.1037/a0022511

Appendices

Appendix A: Online Questionnaire[5]

Q1 Hello!

You are being invited to participate in research on how people use their time during the day. This study is being conducted by Carsten Grimm from the University of Canterbury as part of the requirements for a Master's Thesis. This study has been reviewed and approved by the University of Canterbury Human Ethics Committee. There are no foreseen or known risks with participating in this research. The initial questionnaire will take about 10-15 minutes to complete. Once the questionnaire is completed, please take the time read the text-message procedure; you will be receiving 21 text-messages over 7 days (3 per day, randomly between 9am and 10pm). These text-messages will ask you what you are doing, who you are with, and how you feel about your current activity. The exact details of how to respond are contained in the procedure document. By participating in this research you agree to endeavour to reply via text-message as soon as possible when each message is received. Should it not be possible to reply immediately, you agree to reply as soon as possible once you are able. Your privacy is completely assured. Your name will not be linked to any of the data that you generate in this study. Your cellphone number will not be given out to anyone. Furthermore, your cellphone number and name will never be matched. The data from this research will only be accessed by the researcher and associated supervisors in the first instance, Prof Simon Kemp at UC, and Prof Paul Jose at Victoria University, Wellington. If additional Research Assistants are required for the analysis of the data, they will not have access to any information which may help to identify you. Should the data be published at a later date (such as in a journal), no identifying information will be disclosed. Your participation in this study is completely voluntary. By completing this questionnaire, you voluntarily agree to participate. You may withdraw at any stage and may elect to have any or all of your answers and data erased. If you have any questions please contact the researcher, Carsten Grimm, or Prof Simon Kemp at the University of Canterbury.

Thank you for agreeing to participate!

Q9 Please provide your cellphone number for the experience-sampling part of this study.

Q2 What is your age?

Q10 Gender?

❍ Male (1)
❍ Female (2)

Q11 What is your ethnicity?

Q12 What is your annual income bracket?

❍ Less than $10,000 (1)
❍ $10,000 - $29,999 (2)
❍ $30,000 - $69,999 (3)
❍ $70,000 - $99,999 (4)
❍ Greater than $100,000 (5)

Q62 Where are you currently living?

❍ Christchurch (1)
❍ Wellington (2)
❍ Auckland (3)
❍ Other (please specify): (4) _____

Q3 Below are five statements with which you may agree or disagree. Please indicate your agreement with each statement by selecting the appropriate item from the drop-down menu. Please be open and honest in your responding. 1. In most ways my life is close to my ideal.

---

[5] The Flourishing Scale (Diener et al., 2010) and Ways of Savouring Scale (F. Bryant & Veroff, 2007) were originally included in the online questionnaire but not used in this study.

- ○ 7 = Strongly agree (1)
- ○ 6 = Agree (2)
- ○ 5 = Slightly agree (3)
- ○ 4 = Neither agree nor disagree (4)
- ○ 3 = Slightly disagree (5)
- ○ 2 = Disagree (6)
- ○ 1 = Strongly disagree (7)

Q4 2. The conditions of my life are excellent.

- ○ 7 = Strongly agree (1)
- ○ 6 = Agree (2)
- ○ 5 = Slightly agree (3)
- ○ 4 = Neither agree nor disagree (4)
- ○ 3 = Slightly disagree (5)
- ○ 2 = Disagree (6)
- ○ 1 = Strongly disagree (7)

Q5 3. I am satisfied with my life.

- ○ 7 = Strongly agree (1)
- ○ 6 = Agree (2)
- ○ 5 = Slightly agree (3)
- ○ 4 = Neither agree nor disagree (4)
- ○ 3 = Slightly disagree (5)
- ○ 2 = Disagree (6)
- ○ 1 = Strongly disagree (7)

Q6 4. So far I have gotten the important things I want in life.

- ○ 7 = Strongly agree (1)
- ○ 6 = Agree (2)
- ○ 5 = Slightly agree (3)
- ○ 4 = Neither agree nor disagree (4)
- ○ 3 = Slightly disagree (5)
- ○ 2 = Disagree (6)
- ○ 1 = Strongly disagree (7)

Q7 5. If I could live my life over, I would change almost nothing.

- ○ 7 = Strongly agree (1)
- ○ 6 = Agree (2)
- ○ 5 = Slightly agree (3)
- ○ 4 = Neither agree nor disagree (4)
- ○ 3 = Slightly disagree (5)
- ○ 2 = Disagree (6)
- ○ 1 = Strongly disagree (7)

Q8 Please think about what you have been doing and experiencing during the past 4 weeks. Then report how much you experienced each of the following feelings by selecting the appropriate item from the drop-down menu.

	1 = Very Rarely or Never (1)	2 = Rarely (2)	3 = Sometimes (3)	4 = Often (4)	5 = Very Often or Always (5)

Positive (1)	❍	❍	❍	❍	❍
Negative (2)	❍	❍	❍	❍	❍
Good (3)	❍	❍	❍	❍	❍
Bad (4)	❍	❍	❍	❍	❍
Pleasant (5)	❍	❍	❍	❍	❍
Unpleasant (6)	❍	❍	❍	❍	❍
Happy (7)	❍	❍	❍	❍	❍
Sad (8)	❍	❍	❍	❍	❍
Afraid (9)	❍	❍	❍	❍	❍
Joyful (10)	❍	❍	❍	❍	❍
Angry (11)	❍	❍	❍	❍	❍
Contented (12)	❍	❍	❍	❍	❍

Q13 Below are 18 statements that many people would find desirable, but we want you to answer only in terms of whether the statement describes how you actually live your life. Read each one and then click on the dropdown list next to the statement and select your response. Please be honest and accurate!   1. Regardless of what I am doing, time passes very quickly.

❍ 5 = Very Much Like Me (1)
❍ 4 = Mostly Like Me (2)
❍ 3 = Somewhat Like Me (3)
❍ 2 = A Little Like Me (4)
❍ 1 = Not Like Me At All (5)

Q22 2. My life serves a higher purpose.

❍ 5 = Very Much Like Me (1)
❍ 4 = Mostly Like Me (2)
❍ 3 = Somewhat Like Me (3)
❍ 2 = A Little Like Me (4)
❍ 1 = Not Like Me At All (5)

Q23 3. Life is too short to postpone the pleasures it can provide.

❍ 5 = Very Much Like Me (1)
❍ 4 = Mostly Like Me (2)
❍ 3 = Somewhat Like Me (3)
❍ 2 = A Little Like Me (4)
❍ 1 = Not Like Me At All (5)

Q24 4. I seek out situations that challenge my skills and abilities.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q25 5. In choosing what to do, I always take into account whether it will benefit other people.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q26 6. Whether at work or play, I am usually "in a zone" and not conscious of myself.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q27 7. I am always very absorbed in what I do.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q28 8. I go out of my way to feel euphoric.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q29 9. In choosing what to do, I always take into account whether I can lose myself in it.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q30 10. I am rarely distracted by what is going on around me.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q31 11. I have a responsibility to make the world a better place.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)

- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q33 12. My life has a lasting meaning.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q32 13. In choosing what to do, I always take into account whether it will be pleasurable.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q34 14. What I do matters to society.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q35 15. I agree with this statement: "Life is short – eat dessert first."

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q36 16. I love to do things that excite my senses.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q37 17. I have spent a lot of time thinking about what life means and how I fit into its big picture.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q38 18. For me, the good life is the pleasurable life.

- ❍ 5 = Very Much Like Me (1)
- ❍ 4 = Mostly Like Me (2)
- ❍ 3 = Somewhat Like Me (3)
- ❍ 2 = A Little Like Me (4)
- ❍ 1 = Not Like Me At All (5)

Q14 Below are eight statements with which you may agree or disagree. Using the drop-down menu below, indicate your agreement with each item by selecting the appropriate response for each statement.   1. I lead a purposeful and meaningful life.

○ 7 = Strongly agree   (1)
○ 6 = Agree   (2)
○ 5 = Slightly agree   (3)
○ 4 = Neither agree nor disagree   (4)
○ 3 = Slightly disagree   (5)
○ 2 = Disagree   (6)
○ 1 = Strongly disagree (7)

Q15 2. My social relationships are supportive and rewarding.

○ 7 = Strongly agree   (1)
○ 6 = Agree   (2)
○ 5 = Slightly agree   (3)
○ 4 = Neither agree nor disagree   (4)
○ 3 = Slightly disagree   (5)
○ 2 = Disagree   (6)
○ 1 = Strongly disagree (7)

Q16 3. I am engaged and interested in my daily activities.

○ 7 = Strongly agree   (1)
○ 6 = Agree   (2)
○ 5 = Slightly agree   (3)
○ 4 = Neither agree nor disagree   (4)
○ 3 = Slightly disagree   (5)
○ 2 = Disagree   (6)
○ 1 = Strongly disagree (7)

Q17 4. I actively contribute to the happiness and well-being of others.

○ 7 = Strongly agree   (1)
○ 6 = Agree   (2)
○ 5 = Slightly agree   (3)
○ 4 = Neither agree nor disagree   (4)
○ 3 = Slightly disagree   (5)
○ 2 = Disagree   (6)
○ 1 = Strongly disagree (7)

Q18 5. I am competent and capable in the activities that are important to me.

○ 7 = Strongly agree   (1)
○ 6 = Agree   (2)
○ 5 = Slightly agree   (3)
○ 4 = Neither agree nor disagree   (4)
○ 3 = Slightly disagree   (5)
○ 2 = Disagree   (6)
○ 1 = Strongly disagree (7)

Q19 6. I am a good person and live a good life.

○ 7 = Strongly agree   (1)
○ 6 = Agree   (2)
○ 5 = Slightly agree   (3)
○ 4 = Neither agree nor disagree   (4)

○ 3 = Slightly disagree   (5)
○ 2 = Disagree   (6)
○ 1 = Strongly disagree (7)

Q20 7. I am optimistic about my future.

○ 7 = Strongly agree   (1)
○ 6 = Agree   (2)
○ 5 = Slightly agree   (3)
○ 4 = Neither agree nor disagree   (4)
○ 3 = Slightly disagree   (5)
○ 2 = Disagree   (6)
○ 1 = Strongly disagree (7)

Q21 8. People respect me.

○ 7 = Strongly agree   (1)
○ 6 = Agree   (2)
○ 5 = Slightly agree   (3)
○ 4 = Neither agree nor disagree   (4)
○ 3 = Slightly disagree   (5)
○ 2 = Disagree   (6)
○ 1 = Strongly disagree (7)

Q40 Here are a number of personality traits that may or may not apply to you. Please select the appropriate response to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

Q41 I see myself as:

	Disagree strongly (1)	Disagree moderately (2)	Disagree a little (3)	Neither agree nor disagree (4)	Agree a little (5)	Agree moderately (6)	Agree strongly (7)
1. Extraverted, enthusiastic. (1)	○	○	○	○	○	○	○
2. Critical, quarrelsome. (2)	○	○	○	○	○	○	○
3. Dependable, self-disciplined. (3)	○	○	○	○	○	○	○
4. Anxious, easily upset. (4)	○	○	○	○	○	○	○
5. Open to new	○	○	○	○	○	○	○

experiences, complex. (5)						
6. Reserved, quiet. (6)	❍	❍	❍	❍	❍	❍	❍
7. Sympathetic, warm. (7)	❍	❍	❍	❍	❍	❍	❍
8. Disorganized, careless. (8)	❍	❍	❍	❍	❍	❍	❍
9. Calm, emotionally stable. (9)	❍	❍	❍	❍	❍	❍	❍
10. Conventional, uncreative. (10)	❍	❍	❍	❍	❍	❍	❍

Q42 Please list five positive events that you have experienced in the last week:

1 (1)
2 (2)
3 (3)
4 (4)
5 (5)

Q43 We are interested in how you responded to these events. Please read each statement below and indicate how much each of them applies to how you responded to the events you listed, from 1 = "strongly disagree" to 7 = "strongly agree". Remember that there are no right or wrong answers.   1. I thought about sharing the memory of this later with other people.

❍ 7 = Strongly agree   (1)
❍ 6 = Agree   (2)
❍ 5 = Slightly agree   (3)
❍ 4 = Neither agree nor disagree   (4)
❍ 3 = Slightly disagree   (5)
❍ 2 = Disagree   (6)
❍ 1 = Strongly disagree (7)

Q46 2. I reminded myself how transient this moment was – I thought about it ending.

❍ 7 = Strongly agree   (1)
❍ 6 = Agree   (2)
❍ 5 = Slightly agree   (3)
❍ 4 = Neither agree nor disagree   (4)
❍ 3 = Slightly disagree   (5)
❍ 2 = Disagree   (6)
❍ 1 = Strongly disagree (7)

Q44 3. I jumped up and down, ran around or showed other physical expressions of energy.

❍ 7 = Strongly agree   (1)

- ❍ 6 = Agree (2)
- ❍ 5 = Slightly agree (3)
- ❍ 4 = Neither agree nor disagree (4)
- ❍ 3 = Slightly disagree (5)
- ❍ 2 = Disagree (6)
- ❍ 1 = Strongly disagree (7)

Q45 4. I thought only about the present – got absorbed in the moment.

- ❍ 7 = Strongly agree (1)
- ❍ 6 = Agree (2)
- ❍ 5 = Slightly agree (3)
- ❍ 4 = Neither agree nor disagree (4)
- ❍ 3 = Slightly disagree (5)
- ❍ 2 = Disagree (6)
- ❍ 1 = Strongly disagree (7)

Q47 5. I reminded myself how lucky I was to have this good thing happen to me.

- ❍ 7 = Strongly agree (1)
- ❍ 6 = Agree (2)
- ❍ 5 = Slightly agree (3)
- ❍ 4 = Neither agree nor disagree (4)
- ❍ 3 = Slightly disagree (5)
- ❍ 2 = Disagree (6)
- ❍ 1 = Strongly disagree (7)

Q48 6. I told myself why I didn't deserve this good thing.

- ❍ 7 = Strongly agree (1)
- ❍ 6 = Agree (2)
- ❍ 5 = Slightly agree (3)
- ❍ 4 = Neither agree nor disagree (4)
- ❍ 3 = Slightly disagree (5)
- ❍ 2 = Disagree (6)
- ❍ 1 = Strongly disagree (7)

Q49 7. I looked for other people to share it with.

- ❍ 7 = Strongly agree (1)
- ❍ 6 = Agree (2)
- ❍ 5 = Slightly agree (3)
- ❍ 4 = Neither agree nor disagree (4)
- ❍ 3 = Slightly disagree (5)
- ❍ 2 = Disagree (6)
- ❍ 1 = Strongly disagree (7)

Q50 8. I laughed or giggled.

- ❍ 7 = Strongly agree (1)
- ❍ 6 = Agree (2)
- ❍ 5 = Slightly agree (3)
- ❍ 4 = Neither agree nor disagree (4)
- ❍ 3 = Slightly disagree (5)
- ❍ 2 = Disagree (6)
- ❍ 1 = Strongly disagree (7)

Q51 9. I thought about what a lucky person I am that so many things have happened to me.

- ○ 7 = Strongly agree   (1)
- ○ 6 = Agree   (2)
- ○ 5 = Slightly agree   (3)
- ○ 4 = Neither agree nor disagree   (4)
- ○ 3 = Slightly disagree   (5)
- ○ 2 = Disagree   (6)
- ○ 1 = Strongly disagree (7)

Q52 10. I thought about ways in which it could have been better.

- ○ 7 = Strongly agree   (1)
- ○ 6 = Agree   (2)
- ○ 5 = Slightly agree   (3)
- ○ 4 = Neither agree nor disagree   (4)
- ○ 3 = Slightly disagree   (5)
- ○ 2 = Disagree   (6)
- ○ 1 = Strongly disagree (7)

Q53 11. I told myself how proud I was.

- ○ 7 = Strongly agree   (1)
- ○ 6 = Agree   (2)
- ○ 5 = Slightly agree   (3)
- ○ 4 = Neither agree nor disagree   (4)
- ○ 3 = Slightly disagree   (5)
- ○ 2 = Disagree   (6)
- ○ 1 = Strongly disagree (7)

Q54 12. I reminded myself that it would be over before I knew it.

- ○ 7 = Strongly agree   (1)
- ○ 6 = Agree   (2)
- ○ 5 = Slightly agree   (3)
- ○ 4 = Neither agree nor disagree   (4)
- ○ 3 = Slightly disagree   (5)
- ○ 2 = Disagree   (6)
- ○ 1 = Strongly disagree (7)

Q55 13. I focused on the future – on a time when this good event would be over.

- ○ 7 = Strongly agree   (1)
- ○ 6 = Agree   (2)
- ○ 5 = Slightly agree   (3)
- ○ 4 = Neither agree nor disagree   (4)
- ○ 3 = Slightly disagree   (5)
- ○ 2 = Disagree   (6)
- ○ 1 = Strongly disagree (7)

Q56 14. I reminded myself that nothing lasts forever.

- ○ 7 = Strongly agree   (1)
- ○ 6 = Agree   (2)
- ○ 5 = Slightly agree   (3)
- ○ 4 = Neither agree nor disagree   (4)
- ○ 3 = Slightly disagree   (5)
- ○ 2 = Disagree   (6)
- ○ 1 = Strongly disagree (7)

Q57 15. I told myself how it wasn't as good as I'd hoped for.

- ○ 7 = Strongly agree   (1)
- ○ 6 = Agree   (2)
- ○ 5 = Slightly agree   (3)
- ○ 4 = Neither agree nor disagree   (4)
- ○ 3 = Slightly disagree   (5)
- ○ 2 = Disagree   (6)
- ○ 1 = Strongly disagree (7)

Q58 16. I screamed or made other verbal expressions of excitement.

- ○ 7 = Strongly agree   (1)
- ○ 6 = Agree   (2)
- ○ 5 = Slightly agree   (3)
- ○ 4 = Neither agree nor disagree   (4)
- ○ 3 = Slightly disagree   (5)
- ○ 2 = Disagree   (6)
- ○ 1 = Strongly disagree (7)

Q59 17. I talked to another person about how good I felt.

- ○ 7 = Strongly agree   (1)
- ○ 6 = Agree   (2)
- ○ 5 = Slightly agree   (3)
- ○ 4 = Neither agree nor disagree   (4)
- ○ 3 = Slightly disagree   (5)
- ○ 2 = Disagree   (6)
- ○ 1 = Strongly disagree (7)

Q60 18. I told myself why I deserved this good thing.

- ○ 7 = Strongly agree   (1)
- ○ 6 = Agree   (2)
- ○ 5 = Slightly agree   (3)
- ○ 4 = Neither agree nor disagree   (4)
- ○ 3 = Slightly disagree   (5)
- ○ 2 = Disagree   (6)
- ○ 1 = Strongly disagree (7)

Q61 19. I thought about how things might never be this good again.

- ○ 7 = Strongly agree   (1)
- ○ 6 = Agree   (2)
- ○ 5 = Slightly agree   (3)
- ○ 4 = Neither agree nor disagree   (4)
- ○ 3 = Slightly disagree   (5)
- ○ 2 = Disagree   (6)
- ○ 1 = Strongly disagree (7)

Q39 Thank you!   Please now read the instructions on the texting part of the study. This will explain how to reply to the text-messages you will receive in the coming days. These instructions are in the attached document "Procedure Explanation" in the e-mail you received from whatyoudoingstudy@gmail.com. Please now click that last button to save all your answers >

The Daily Use of Time

Participant Procedure
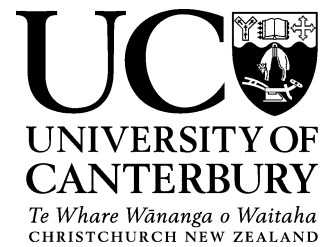
Thank you for agreeing to participate in this research! We are interested in understanding how people go about their daily lives and what people spend time on during the day.

Measures

Starting in the next few days, you will be receiving SMS text-messages (texts) asking you to describe your daily activities. These texts will all be in a standard format and will ask you 4 questions:

1. **What are you doing right now?** You need to respond with as much detail as you feel is necessary to accurately describe the activity. For example, 'watching tv at home', 'walking to work', 'in a work meeting', 'jogging around the park'.

2. **Who are you with?** You need to respond with as much detail as you feel is necessary to accurately describe who you are with. For example, 'alone', 'my partner', 'with a workmate', 'with my boss', 'with a group of friends'. Please do not mention anyone by name.

3. **How pleasurable, meaningful, engaging?** You need to rate how much you are currently experiencing pleasure from the activity, meaning from the activity, and engagement from the activity. Use your phone's 1-9 keypad as a scale, where 1 = not at all; 5 = moderately; 9 = extremely.

Pleasurable means how much you are experiencing enjoyment, positive emotion, or happiness.

Meaningful means how much you feel the activity is rewarding, helping you to advance your goals, or is worthwhile.

Engaged means how much you feel the activity has you focused, challenged, or 'in the zone'.

4. **How happy are you?** Rate your current feeling of happiness using the same 1-9 scale; 1 = not at all; 5 = moderately; 9 = extremely.

Example Text

You will receive texts in this exact format:

When you reply you only need to give a number rating for the categories of pleasure, meaning, engagement, and happiness (as per the example txt in the picture).

Two Important Things to Note! 1) Please use the exact same order for each response; pleasure-meaning-engagement-happiness. 2) Please separate 'what you are doing' from 'with who' from '1475' by either a comma (,) or fullstop (.) This all helps with sorting through the large dataset later: *Work meeting, workmates and my boss, 1475*

This example means that this person rates the current activity as 1 out of 9 for pleasure, 4 out of 9 for meaning, 7 out of 9 for engagement, and is currently feeling happiness at a level of 5 out of 9.

Receiving Texts

When?

A "random within intervals" schedule will be used for this research. This means you will receive one text randomly within 3 different time periods during the day; morning, afternoon, and night (but always on the hour within these periods). These periods correspond to and include; 9am-12pm, 1pm-5pm, and 6pm-10pm. This will start in a few days time.

Response Rate

During the research period you are asked to please respond to texts as promptly as possible, so please keep your phone very nearby—and topped-up and in-credit—over the assigned reporting window! If you miss a text for any reason then please respond as soon as you are able to and say what you were actually doing and feeling when the text came in. Replying promptly once you are free is entirely acceptable.

After the Texting Phase

Re-take the Questionnaire + Course Credit

After the 7 days of texting you'll receive an email asking you to re-take the first questionnaire. In that email you'll also receive some additional information about this study that you might find really interesting!

In the final email at the end of the study you will also need to fill out a very short (three questions) exercise in order to receive your course credit. Reply to the email with your answers attached and the researcher will ensure it goes in to the Psychology Office.

Confidentiality

All of your answers will be treated with ***complete confidentiality***. Your name will not be connected to the data in any way; your name and/or email and your cellphone number will be stored in completely separate places. The data will only be seen by the researcher and supervisors. Text responses will not be traced back to you so you can feel completely safe to respond *honestly* and *accurately*.

Now! A Quick Test

If you have understood everything we are ready to begin – we just need to check your phone's compatibility with the texting software. Please text this number <u>now</u> to let the researcher know you are reading this and ready> **0276234114**. After that you will receive a text in the study format from the **software**. All you have to do is reply to that text to make sure it all works. If you don't hear anything after your reply then it is working fine. The next text you'll receive is when the study commences in a few days. Please use this opportunity to practice replying in the standard format!

If you have any questions please ask.

Thank you very much for agreeing to take part in this research!

Carsten J. Grimm

University of Canterbury

MacKerron & Mourato (2011).	White & Dolan (2009).	Kahneman, Krueger, Schkade, Schwarz, & Stone (2004).	Robinson & Godbey (1997).
Working, studying	Work	Working	Work
			*Work breaks
In a meeting, seminar, class			*Organizations
Travelling, commuting	Commute	Commuting	Work commute
Cooking, preparing food	Cook	Preparing food	Cooking
Housework, chores, DIY	Housework	Housework	*Other housework
			*Home repairs
			*Clean house
			*Laundry
Admin, finances, organising			Pay bills, financial etc.
Shopping, errands	Shopping	Shopping	*Other shopping
			*Grocery shopping
Waiting, queueing			
Childcare, playing with children	Time with children	Taking care of my children	*Playing/reading with children
			*Baby care
			*Child care
Pet care, playing with pets			
Care or help for adults	Volunteer		Help others
Sleeping, resting, relaxing	Rest, relax	*Relaxing	Sleep
		*Napping	
Sick in bed			Health care, doctor
Meditating, religious activities	Pray, meditate	Pray/worship/meditate	Church, religion
Washing, dressing, grooming	Self-care		*Bathing
			*Dressing
Intimacy, making love	Sex	Intimate relations	Sex
Talking, chatting, socialising	Socialise	Socialising	*Socialise, visit others
			*Socialise with family
Eating, snacking	Eat	Eating	*Meals away
			*Meals at home
Drinking tea/coffee			
Drinking alcohol			
Smoking			
Texting, email, social media		*On the phone	
Browsing the internet	*Read, use Internet	*Computer/ e-mail/ Internet	
Watching tv, film	Watch TV	Watching TV	TV
Listening to music	Listen to music		
Listening to speech/podcast			
Reading			Reading
Theatre, dance, concert			
Exhibition, museum, library			
Match, sporting event			
Walking, hiking	Outdoor activities		
Sports, running, exercising	Exercise	Exercising	*Play Sports
			*Exercise
Gardening, allotment			Yardwork
Birdwatching, nature watching			
Hunting, fishing			
Computer games, iPhone games			
Other games, puzzles			
Gambling, betting			
Hobbies, arts, crafts			Hobbies, crafts
Singing, performing			
Other			
			Car repair

Companionship categories and associated average momentary pleasure, meaning, engagement, and happiness ratings are shown in Table 10 below. Participants were on average happiest and experienced most pleasure when they were with their partners or spouses. Interestingly, participants experienced most meaning and engagement when they were with class-mates and team-mates. Also of note is the large amount of time participants spent alone—39.5 percent of the time—and the finding that being alone was lowest or second lowest scored category on all ratings (second lowest only to being with pets or strangers).

Table 10

Companionship Categories and Average Momentary Ratings

Companionship	Occurrences		Pleasure		Meaning		Engagement		Happiness	
Partner/spouse	459	(13.3%)	6.38	(1st)	5.61	(3rd)	6.01	(3rd)	7.15	(1st)
Friends	566	(16.4%)	6.32	(2nd)	5.43	(4th)	6.05	(2nd)	6.84	(2nd)
Flatmates	140	(4.0%)	6.21	(3rd)	4.74	(7th)	5.80	(5th)	6.68	(3rd)
Family	330	(9.5%)	5.93	(4th)	4.98	(6th)	5.48	(6th)	6.51	(4th)
Pets/ animals	21	(0.6%)	5.86	(5th)	3.90	(9th)	4.62	(9th)	6.48	(5th)
Classmates/ team-mates	323	(9.3%)	5.33	(6th)	6.29	(1st)	6.15	(1st)	6.07	(6th)
Workmates/ clients	223	(6.4%)	5.16	(7th)	5.41	(5th)	5.94	(4th)	6.01	(7th)
Stranger/ people I don't know	30	(0.9%)	4.13	(9th)	5.83	(2nd)	5.13	(7th)	5.80	(8th)
Alone	1366	(39.5%)	5.15	(8th)	4.71	(8th)	5.00	(8th)	5.79	(9th)

Note. Companionship listed in descending order based on average happiness ratings.

Table 11 below shows the three most frequent behaviours for each companionship category. Watching tv was the most frequent daily activity for three companionship categories (partner, flatmates, and family) and was the most frequent behavioural category overall—tied for first place with studying or working on one's education.

The three most frequent activities to do with classmates or team-mates were attending lectures, studying, or exercising. The three most frequent activities to do with one's partner were watching tv, sleeping, and eating. This helps to explain why this sample experienced more meaning and engagement when they were with classmates and team-mates rather than with their partners.

Table 11

Top 3 Most Frequent Daily Activities Associated with each Companionship Category

Companionship	Most frequent activities							
	1st			2nd			3rd		
Partner/spouse	Watching/ movies	104	(22.7%)	Sleeping/ resting/ relaxing	71	(15.5%)	Eating/ snacking/ drinking tea/ coffee	46	(10.0%)
Friends	Socialising/ talking/ chatting	109	(19.3%)	Lectures/ class/ lab	74	(13.1%)	Watching tv/ movies	70	(12.4%)
Flatmates	Watching tv/ movies	44	(31.4%)	Eating/ snacking/ drinking tea/ coffee	29	(20.7%)	Cooking/ preparing food	10	(7.1%)
Family	Watching tv/ movies	98	(29.7%)	Eating/ snacking/ drinking tea/ coffee	58	(17.6%)	Socialising/ talking/ chatting	32	(9.7%)
Pets/ animals	Sleeping/ resting/ relaxing	5	(23.8%)	Watching tv/ movies	4	(19.0%)	Cooking/ preparing food	4	(19.0%)
Classmates/ team-mates	Lectures/ class/ lab	175	(54.2%)	Studying/ working on education	46	(14.2%)	Exercising/ sports	29	(9.0%)
Workmates/ clients	Paid work	175	(78.5%)	Eating/ snacking/ drinking tea/ coffee	8	(3.6%)	Socialising/ talking/ chatting	7	(3.1%)
Stranger/ people I don't know	Commuting/ travelling	13	(43.3%)	Paid work	4	(13.3%)	Admin/ organising/ finances	2	(6.7%)
Alone	Studying/ working on education	293	(21.4%)	Commuting/ travelling	176	(12.9%)	Sleeping/ resting/ relaxing	152	(11.1%)

Notes. Raw number of occurrences shown with percentage of overall occurrences for each companionship category shown in brackets. Companionship listed in descending order based on average happiness ratings.