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Exploring the Effect of Narrative Health Information and the

Moderating Role of Systematic Processing on the Impact of

Self-Affirmation

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DECLARATION

The thesis conforms to an 'article format' in which the middle chapters consist of discrete articles written in a style that is appropriate for publication in peer-reviewed journals in the field. The first and final chapters present synthetic overviews and discussions of the field and the research undertaken.

Chapter 3 has been invited to revise and resubmit at *Annals of Behavioural Medicine*. The author contributions are as follows: Kerry Fox was responsible for all of the data collection, data analysis and writing of the manuscript; Peter Harris and Donna Jessop were responsible for providing feedback on study design and corrections to the manuscript. Kerry Fox, Peter Harris and Donna Jessop were collectively responsible for the initial conception of the research.

I hereby declare that this thesis has not been and will not be, submitted in whole or in part to another University for the award of any other degree.

Signature:……………………………………

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SUMMARY

Self-affirmation shows promise as a technique for promoting more open-minded responding to health-risk information. However, studies to date have largely ignored a prevalent type of health information: experiential or *narrative* information. The aims of this research programme were therefore to (1) examine whether self-affirmation would promote more open-minded responding to narrative information and (2) test individual differences in systematic processing as a potential moderator.

Chapter 2, Study 1 ($N = 52$) found that self-affirmation encouraged less derogation and counter-arguing in response to a narrative leaflet detailing the risks of alcohol consumption. Low systematic processors reported consuming significantly less alcohol at follow-up, despite initially reporting lower risk perceptions. In Study 2 ($N = 67$), self-affirmation produced mixed effects on outcomes. Moderation analyses showed that those low in systematic processing reported lower personal relevance and negative affect following the message, and evidence of less engagement with the narrative (lower reported attention to the narrative and less perspective taking), when self-affirmed.

In the study reported in Chapter 3 ($N = 142$), after viewing a narrative video outlining the risks of alcohol consumption, self-affirmed participants reported consuming significantly less alcohol at follow-up. Self-affirmed participants also engaged in more open-minded responding (e.g., evidence of more message acceptance) to the health information, which was mediated by narrative engagement. Systematic processing did not moderate any effects.

In Chapter 4, Study 1 ($N = 157$) a graphic narrative about the benefits of exercise was no more effective in changing outcomes than a non-narrative version of the same information. In Study 2 ($N = 71$), the few effects of self-affirmation were typically moderated by systematic processing.

Chapter 5 ($N = 197$) examined the impact of self-affirmation on a real health campaign that uses narrative formats to present information: *Dry January*. Again systematic processing typically moderated the effects of self-affirmation.

On balance, the research programme provides some evidence that self-affirmation can promote more open-minded responding to narrative information. However, those low in systematic processing tended to show less persuasion when self-affirmed.

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CHAPTER 1: General Introduction

Abstract

The research reported in this thesis was designed to explore the effects of self-affirmation on information expressed in *narrative* form, one that is in widespread use but contrasts with the *statistical* form typically used in self-affirmation studies. In addition, the moderating role of people's tendency to process health information systematically on self-affirmation effects was tested. This introductory chapter provides an overview of the relevant literature relating to self-affirmation, narrative health information and systematic processing. The importance and relevance of targeting health behaviours is considered, with particular attention to alcohol consumption and physical activity as the focal health behaviours in this thesis. This chapter also provides a theoretical overview of self-affirmation theory, along with how it is typically experimentally manipulated. Research on self-affirmation theory as applied to the health domain is presented, testing the effects of self-affirmation on open-minded responding to health information, cognitions indicative of motivation to change behaviour and actual behaviour change. Attention is drawn to the limited amount of research on the format and features of health messages used alongside self-affirmation manipulations to persuade people to change their behaviour, and the literature on narrative health information is introduced. Given that self-affirmation manipulations are unlikely to work uniformly across individuals, the tendency of people to process health information systematically is introduced as a potential moderator of self-affirmation effects. This chapter concludes by stating the over-arching research questions of the current research programme, as well as the specific aims of the studies in this thesis.

Changing Health Behaviours

The Impact of Lifestyle Behaviours on Health

The leading contemporary causes of mortality and morbidity are attributable to a number of health behaviours, such as alcohol consumption, poor diet, lack of physical activity, and smoking (Mokdad, Marks, Stroup, & Gerberding, 2004; World Health Organisation, 2013). It is estimated that improving six health behaviours could prevent more than 37 million premature deaths worldwide over the next 15 years (Kontis et al., 2014), meaning that promoting healthier lifestyles is a priority. Accordingly, the World Health Organisation's 'Global Plan for Prevention and Control of Noncommunicable Diseases 2013-2020' outlines nine global targets to reduce the burden of death and illness from health behaviours, including a 30% relative reduction in tobacco use, a 25% relative reduction regarding the risk of premature mortality from cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases, a 10% relative reduction in alcohol consumption and a 10% relative increase in physical activity (World Health Organisation, 2013).

Two core health behaviours that seem to be particularly important are alcohol consumption and physical activity; each year, it is estimated that 6.5 million deaths worldwide are attributable to alcohol consumption and physical inactivity (World Health Organisation, 2014). These behaviours comprise the behavioural domains for the empirical research presented in this thesis and their implications for health and health-related outcomes are discussed in more detail below.

Alcohol consumption and health. Worldwide, alcohol consumption is the leading risk factor for premature death and disability among people aged between 15 and 49 (Lim et al., 2012). In the UK, between 2010 and 2011, there were 1.2 million alcohol-related hospital admissions and around 15,000 alcohol-related deaths

(Department of Health, 2015). Moreover, alcohol intake has been identified as a crucial factor in the development of over 60 different medical conditions, including cancer, diabetes, stroke, cardiovascular disease and depression (Rehm et al., 2009; Room, Babor, & Rehm, 2005), with 4-6% of all new cancer diagnoses in the UK in 2013 being related to alcohol consumption (Public Health England, 2015). Other immediate health risks of alcohol also increase with consumption, including self-inflicted injuries, violence, road traffic accidents, falls and drowning (Rehm et al., 2009).

Physical activity and health. Globally, a third of adults and four-fifths of adolescents do not reach the public health guideline levels of recommended physical activity (Hallal et al., 2012). This so called "pandemic of physical inactivity" (Kohl et al., 2012, p. 294) is the fourth leading risk factor for global mortality (World Health Organisation, 2016). Engaging in sufficient physical activity can reduce the risk of numerous medical conditions, including coronary heart disease, high blood pressure, stroke, diabetes and cancers, while also evidencing health benefits, such as improved fitness, healthier body mass and improved bone health (Lee et al., 2012). Even small increases in physical activity are beneficial, protecting against chronic diseases and promoting an improved quality of life (Department of Health, 2011), as well as boosting energy and positive mood (Williams et al., 2008).

Barriers and Challenges Facing Health Behaviour Change

Given the important impact of lifestyle factors such as alcohol consumption and physical activity on health outcomes, it is perhaps not surprising that health promoters have spent considerable time and effort attempting to encourage people to adopt healthier lifestyles. One way that health promoters can intervene is to communicate relevant risk through health promotion campaigns, with the ultimate goal being to persuade and encourage people to partake in more health-enhancing behaviours (e.g.,

physical activity, healthy diet, safe sexual practices), and fewer health-compromising ones (e.g., smoking and over-consumption of alcohol and food).

It is a common finding, however, that individuals often process personally relevant health information defensively (Good & Abraham, 2007; van 't Riet & Ruiter, 2013), which may limit the efficacy of health promotion campaigns. In particular, individuals to whom recommendations of health information are most relevant may show the greatest defensive processing of the information, meaning that health promotion campaigns can be the least effective for this particular group (Block & Williams, 2006; Good & Abraham, 2007; Keller, 1999; van Riet & Ruiter, 2011; Sherman, Nelson & Steele, 2000). While responding defensively has the purpose of reducing the threat posed by personally relevant information, it often means that people remain unpersuaded of their need to change behaviour (e.g., Liberman & Chaiken, 1992). One explanation as to why people may respond defensively is put forth by Self-Affirmation Theory (Steele, 1988), which focuses on how personally relevant health information challenges people's views of their self. From the perspective of self-affirmation theory, a message to a smoker about the health risks of smoking or to someone who drinks excessively about the risks of alcohol consumption, for example, may constitute a self-threat in so far as it challenges their sense of being competent or morally adequate. According to the theory, the perception of competence or moral adequacy is a cherished one that people are highly motivated to maintain such that presenting threatening health information may threaten the individual's self-image and, therefore, can lead to defensiveness towards the message.

Self-Affirmation Theory

Self-Affirmation Theory

Self-affirmation theory proposes that people are highly motivated to protect their global self-integrity, which was defined by Steele (1988) as the extent to which people see themselves as being "adaptively and morally adequate, that is, competent, good, coherent, unitary, stable, capable of free choice, capable of controlling important outcomes…" (p. 262). According to the theory, people will take steps to uphold this "narrative of personal adequacy" (Cohen & Sherman, 2014, p. 382) when they feel that their self-integrity is being threatened. Thus, individuals may respond to information that contradicts their positive self-view in a defensive manner (Harris & Epton, 2009). While such responses may serve to lessen the impact of the self-threat, ultimately it may mean that people do not process the potentially important information.

Practically, self-affirmation theory suggests that the tendency to process threatening information defensively can be overcome by bolstering self-integrity (Steele, 1988). Critically, as people are concerned about maintaining their *global* sense of self-integrity, self-affirming some other aspect of identity that is at least equally important as the presented threat can secure one's sense of self-integrity (Sherman & Cohen, 2006). Self-affirming is "an act that manifests one's adequacy and thus affirms one's sense of global self-integrity" (Cohen & Sherman, 2014, p. 337); when threatened in one domain (e.g., health), people can restore their global self-integrity by affirming in another important domain (e.g., relationships). Thus reassured, the self-evaluative impact of the information is reduced, which lessens the need to respond defensively to threatening information (Cohen & Sherman, 2014).

Inductions of Self-Affirmation in Experimental Research

Experimental self-affirmations are "an activity that provides the opportunity to assert the importance of core values, often through writing exercises" (Cohen & Sherman, 2014, p. 337). The most commonly used is the values-affirmation (Epton, Harris, Kane, van Koningsbruggen, & Sheeran, 2015; McQueen & Klein, 2006), in which people are typically required to choose their most important value, for example, honesty or trustworthiness, and then write about why it is important to them. This writing can take the form of a free-writing essay (e.g., Armitage & Rowe, 2011; Harris & Napper, 2005; Klein, Harris, Ferrer, & Zajac, 2011), or can be more structured, for example, by asking people to give three reasons why a value is important to them and one example that demonstrates its importance (e.g., Harris et al., 2014; Sherman et al., 2009). Notably, as people select their most important value independently, affirmation manipulations are tailored to each person's valued identity, meaning that they are free to focus on what is central to them (Sherman, 2013). Participants in the control condition are typically asked to pick their least important value from the list and write about that.

Applications of Self-Affirmation Theory

Self-affirmation theory has been applied to a number of different research fields in social and health psychology (for reviews see Cohen & Sherman, 2014; Sherman & Cohen, 2006). For example, self-affirmation has been applied to education, showing that it can lessen the impact of stereotype threat (Brady et al., 2016; Cohen, Garcia, Apfel, & Master, 2006; Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski, 2009; Layous et al., 2016; Powers et al., 2016; Sherman et al., 2013). Furthermore, self-affirmation has been applied to stress, showing that self-affirmation can buffer effects of experimental and naturalistic stressors on physiological and psychological outcomes (Creswell et al., 2005; Creswell, Dutcher, Klein, Harris, & Levine, 2013; Sherman,

Bunyan, Creswell, & Jaremka, 2009). There have been applications of self-affirmation to improve self-control and task performance (Logel & Cohen, 2012; Schmeichel & Vohs, 2009; Storr & Sparks, 2016) and, more recently, researchers have explored spontaneous self-affirmation (e.g., Emanuel et al., 2016; Ferrer et al., 2015; Persoskie et al., 2015; Taber et al., 2015).

The focus of the current research programme is on the application of self-affirmation to the domain of health. As self-affirmation theory predicts that individuals may respond defensively to information that contradicts their positive self-view (Steele, 1988), being informed that one is engaging in a behaviour that puts their health at risk potentially represents a threat to self-integrity, especially as most people want to view themselves as being healthy (Cohen & Sherman, 2014). Since one of the first published test of self-affirmation theory in the health domain, to promote reduced caffeine consumption in 1998 (Reed & Aspinwell, 1998), many studies have explored the potential positive effects self-affirmation across a range of health behaviours (e.g., smoking, alcohol consumption, exercise and screening) and outcome measures (e.g., indicators of open-mindedness to health information, intentions and health behaviour change).

Self-Affirmation as Applied to Health Behaviours

In a typical self-affirmation study in the health domain, participants are randomly allocated to complete an experimental self-affirmation manipulation or control equivalent task before being exposed to personally relevant health information designed to threaten at-risk participants (Harris & Epton, 2009). Immediately after receiving the health information, participants then complete a series of dependent variables intended to assess the impact of self-affirmation on a variety of outcome measures, such as open-minded responding to health information and cognitions

indicative of motivation to change behaviour. Most studies also incorporate a follow-up, in which behaviour since the initial self-affirmation manipulation is usually self-reported by participants.

Encouragingly, two recent meta-analyses have demonstrated that self-affirmation has a positive, reliable, effect on outcomes in the health domain. Epton and colleagues (Epton et al., 2015) meta-analysed self-affirmation interventions across outcomes measured at three points of health-behaviour change: indicators of message acceptance, intentions to change behaviour, and actual health behaviour change. They reported small but reliable effects of self-affirmation on message acceptance ($d_+ = .17$; across 34 studies, $N = 3,433$), behavioural intentions ($d_+ = .14$; across 64 studies, $N = 5,564$) and subsequent behaviour ($d_+ = .32$; across 46 studies, $N = 2,715$). Sweeney and Moyer (2015) found similar effects in their smaller meta-analysis[1], reporting a small effect of self-affirmation on intentions ($d_+ = .26$; across 14 studies) and behaviour ($d_+ = .27$; across 12 studies). Importantly, the effect sizes observed in both these meta-analyses are comparable in magnitude to those obtained in meta-analyses of other health-behaviour change interventions (e.g., Johnson, Scott-Sheldon, & Carey, 2010; Sheeran et al., 2013).

Overall, therefore, self-affirming seems to have a positive effect on the most commonly reported outcomes relating to health behaviour change in the growing body of self-affirmation literature. It is notable, however, that there are some inconsistencies between studies regarding what variables are measured and how, as well as which variables are affected by the manipulation (e.g., see Harris & Epton, 2009, for a review). Recent reviews of self-affirmation studies in the health domain include two

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[1] Participant numbers are not reported by authors.

narrative reviews by Harris and Epton (2009, 2010) and in the two meta-analyses described above (Epton et al., 2015; Sweeney & Moyer, 2015).

The Effects of Self-Affirmation on Open-Minded Responding to Health Information

Responding to personally relevant health information in an open-minded manner is a significant first step in the process of health behaviour change (Harris & Napper, 2005). It is important to note, however, that open-minded responding in self-affirmation research is comprised of various measures assessing different aspects of such responding. Indeed, while there was an overall positive impact of self-affirmation on so-called message acceptance demonstrated in Epton et al.'s (2015) meta-analyses, their measure of 'message acceptance' comprised different measures assessing belief in the proposed link, indices of persuasion and message derogation, which is akin to the variables grouped under the open-minded responding to health information umbrella in the current thesis.

In the health domain, self-affirming has increased reported acceptance of health messages in the context of smoking cessation (Armitage, Harris, Hepton, & Napper, 2008; Crocker, Niiya, & Mischkowski, 2008), alcohol consumption (Harris & Napper, 2005) and caffeine consumption (Sherman, Nelson, & Steele, 2000; van Koningsbruggen, Das, & Roskos-Ewoldsen, 2009). The extent to which participants have reported derogating health information has also been shown to be reduced after self-affirming (Armitage, Harris, & Arden, 2011; Jessop, Simmonds, & Sparks, 2009; Scott, Brown, Phair, Westland, & Schüz, 2013; van Koningsbruggen & Das, 2009). As well as increasing perceptions of personal relevance of the health risk (Harris, Mayle, Mabbott, & Napper, 2007; Harris & Napper, 2005; Napper, Harris, & Epton, 2009; Sherman et al., 2000), self-affirmation has been found to increase people's perceptions

of actual risk from their unhealthy behavioural choices (Harris & Napper, 2005; Napper et al., 2009). Furthermore, self-affirmed participants tend to experience greater levels of negative affect (i.e., concern, fear and worry) compared to non-affirmed participants in the context of alcohol consumption (Harris & Napper, 2005; Klein et al., 2011), smoking cessation (Harris et al., 2007), diet (Griffin & Harris, 2011) and sunscreen use (Jessop et al., 2009).

Taken together, there is a growing body of evidence suggesting that self-affirmation promotes open-minded responding to personally relevant health information compared to non-affirmation. Critically, however, indices of open-minded responding have been inconsistently measured across studies, meaning that some of the positive effects of self-affirmation are restricted to a small number of experiments. Furthermore, it is important to note that some studies have reported no effects of self-affirmation effects on open-minded responding in some situations (e.g., Harris & Napper, 2005; Knight & Norman, 2016).

The Effects of Self-Affirmation on Cognitions Indicative of Motivation to Change Behaviour

One key cognition indicative of motivation to change behaviour is intention. Indeed, the impact of self-affirmation on intentions to perform recommended health behaviours has been extensively explored in the literature and both aforementioned meta-analyses reported that self-affirmation had a positive effects on explicit measures of intention (Epton et al., 2015; Sweeney & Moyer, 2015). Encouragingly, self-affirming has increased intentions in the context of alcohol consumption (Harris & Napper, 2005), smoking cessation (Armitage et al., 2008; Harris et al., 2007), safe sun exposure (Jessop et al., 2009; Mays & Zhao, 2016), caffeine consumption (Sherman et al., 2000; van Koningsbruggen et al., 2009), physical activity (Cooke, Trebaczyk,

Harris, & Wright, 2014), diet (Jessop, Sparks, Jessop, Dodds, & Lynch, 2016; van Koningsbruggen et al., 2014) and screening (van Koningsbruggen & Das, 2009).

While not explored in either of the meta-analyses, there is also evidence that self-affirmation promotes other cognitions indicative of motivations to change behaviour. As such, self-affirmed participants report more positive attitudes towards behaviour change compared to controls (Cooke et al., 2014; Jessop et al., 2009; Jessop, Sparks, Buckland, Harris, & Churchill, 2014; Jessop et al., 2016). Recently, self-affirmation has also been found to increase anticipated feelings of regret towards performing or not performing a specific health behaviour (van Koningsbruggen et al., 2014).

Although the overall evidence suggests that self-affirmation has a positive impact on cognitions indicative of motivation to change behaviour, it is noteworthy that some individual studies have found no effects of self-affirmation on some (Dillard, McCaul, & Magnan, 2005; Harris et al., 2007) or all outcomes (Knight & Norman, 2016; Norman & Wrona-Clarke, 2016), or have found that self-affirmed participants actually report lower intentions to behave in a healthy manner (Mays & Zhao, 2016).

The Effects of Self-Affirmation on Health Behaviour Change

From an applied perspective, self-affirmation theory offers one of few techniques available to reduce resistance to personally relevant health information (Harris & Epton, 2009). Therefore, it is significant that both Epton et al. (2015) and Sweeney and Moyer (2015) reported positive effects of self-affirmation on subsequent behaviour (effect sizes $d_+ = .32$ and $d_+ = .27$ respectively) across a variety of health behaviours in their meta-analyses. In the health domain – where small changes in behaviour can have important implications for health – this is an encouraging finding.

The behavioural domains in which experimental studies have found self-affirmation to promote behaviour change at follow-up include smoking (Armitage et al., 2008; Memish, Schüz, Frandsen, Ferguson, & Schüz, 2016) exercise (Cooke et al., 2014; Falk et al., 2015; Good, Harris, Jessop, & Abraham, 2015; Jessop et al., 2014), diet (Epton & Harris, 2008; Harris et al., 2014; Logel & Cohen, 2012; Pietersma & Dijkstra, 2011), alcohol consumption (Armitage & Arden, 2016; Armitage et al., 2011; Harris & Napper, 2005), purchasing condoms (Sherman et al., 2000), dental flossing (Sherman, Uskul, & Updegraff, 2011) and safe sun exposure (Jessop et al., 2009; Schüz, Schüz, & Eid, 2013). Moreover, intervention studies have demonstrated that self-affirmation can promote behaviour change at follow-up (e.g., Bradbury, Upsher, & Chilcot, 2016; Ogedegbe, 2012; Wileman et al., 2014). While the majority of these effects are found at 7-day follow-up (e.g., Armitage et al., 2011; Harris et al., 2014), there is an increasing amount of evidence suggesting that self-affirmation manipulations have the ability to promote actual health behaviour changes that are durable over time (e.g., Armitage & Arden, 2016; Logel & Cohen, 2012).

While the effect of self-affirmation on behaviour seems to be larger than the effect on intentions (Epton et al., 2015), it is important to note that some studies do not find a positive effect of self-affirmation on longer-term behaviour change. This includes on caffeine consumption after seven days (Reed & Aspinwall, 1998), smoking cessation after seven days (Harris et al., 2007), and alcohol consumption at one week (Knight & Norman, 2016; Norman & Wrona-Clarke, 2016), two week (Meier et al., 2015) and one month follow-up (Harris & Napper, 2005).

Applications of Self-Affirmation to Personally Relevant Health Information about Alcohol Consumption

Self-affirmation manipulations have shown promise in the alcohol domain. For example, Harris and Napper (2005) found that self-affirmed participants (vs. controls) increased perceived risk after presentation of health information outlining the link between alcohol consumption and breast cancer; self-affirming also increased intentions but only in high-risk drinkers. Similarly, Klein (Klein et al., 2011) reported that self-affirmation increased perceived vulnerability to breast cancer but had no impact on perceived risk, while Ferrer, Shmueli, Bergman, Harris, and Klein, (2012) found self-affirmed participants reported greater implementation intentions to reduce alcohol consumption than control participants. It is important to note that each of these studies presented participants with a relatively specific health threat associated with alcohol consumption – breast cancer – so these results should be interpreted with this in mind.

With a more general health threat message about alcohol consumption, Armitage, Harris and Arden (2011) found that self-affirmed participants reported lower levels of alcohol consumption (1 unit per day less) than their non-affirmed counterparts at one-week follow-up, as well as reporting increased perceived threat and lower derogation of the health message. In an interesting application of self-affirmation, Armitage and Arden (2016) embedded a self-affirming implementation intention into the label of a wine bottle. Compared to participants who had wine bottles with standard labelling, participants who had a bottle with the self-affirming implementation intention label poured significantly less wine in the laboratory and, at one-month follow-up, reported consuming significantly fewer units of alcohol.

However, it is notable that some studies have not measured the impact of self-affirmation on subsequent alcohol consumption (Ferrer, Shmueli, Bergman, Harris, &

Klein, 2012; Klein et al., 2011), or have found no significant effects of self-affirmation on any measures assessed immediately post-manipulation or at follow-up (Knight & Norman, 2016; Meier et al., 2015; Norman & Wrona-Clarke, 2016; Scott et al., 2013).

Applications of Self-Affirmation to Personally Relevant Health Information about Exercise

The impact of self-affirmation on exercise – a health promoting behaviour – has been positive. For example, Cooke, Trebaczyk, Harris and Wright (2014) found that, relative to controls, self-affirmed participants reported greater levels of physical activity at 7-day follow-up. Interestingly, while self-affirmation had no effect on physical activity-related intentions, attitude, perceived behavioural control or subjective norms immediately post-manipulation, self-affirmed participants reported more positive attitudes and greater intentions towards increasing their physical activity at follow-up.

Furthermore, Jessop, Sparks, Buckland, Churchill and Harris (2014, Study 1) found that a self-affirmation manipulation resulted in more positive attitudes, greater levels of response-efficacy (i.e., the belief that the recommended action will avoid the danger) and marginally greater perceptions of behavioural control towards increasing levels of exercise. Moreover, self-affirmed participants were more likely to have increased the number of times they exercised at 7-day follow-up compared to their non-affirmed counterparts (although this effect was only apparent for participants who were not required to form implementation intentions).

However, it is important to note that some studies have demonstrated no main effect of self-affirmation on any exercise-related outcome (Düring & Jessop, 2015; Epton et al., 2014), or report that self-affirmation may have unfavourable effects in some participants (Good et al., 2015).

The Importance of the Health Information

The Impact of Self-Affirmation on the Processing of Health Information

Critically, self-affirming does not simply promote simple-minded acceptance of health information (Cohen & Sherman, 2014; Harris & Epton, 2009). Instead, self-affirmation is believed to change the way in which individuals approach health information, with manipulations acting as catalysts that enable people to process health information more carefully and objectively (Harris & Epton, 2009; Sherman, 2013; Sherman & Cohen, 2006).

In support of this assertion, there is evidence that self-affirmation increases objectivity by boosting critical scrutiny of information. Correll, Spencer and Zanna (2004) manipulated the quality of arguments in a video message about tuition fees (a non-health domain). The premise was that if self-affirmation increases careful, systematic processing of health information, self-affirmed participants should be more persuaded by strong arguments than weak arguments. In support of this, self-affirmed participants were found to be more sensitive to the quality of the arguments than their non-affirmed counterparts: self-affirmation encouraged positive responding to strong information, but also increased rejection of weak information. Similarly, in the health domain, Klein (Klein et al., 2011) manipulated the quality of a message linking caffeine consumption to breast cancer. Here, self-affirmed participants reported greater feelings of vulnerability and increased intentions to reduce caffeine consumption only when reading the strong message. There were no effects of self-affirmation on the weak messages (though see Meier et al., 2015).

Consistent with these findings, self-affirmation has been found to increase the amount of attention paid to the presented health information. For example, Klein and Harris (2009) found that self-affirmed participants had an attentional bias toward the

threatening words in the health message (i.e., participants were quicker to respond to threatening words from the health message using the visual-dot-probe task), but this was evident only in individuals to whom the message was personally relevant (i.e., high alcohol consumers) (see also Kessels, Harris, Ruiter, & Klein, 2016; Reed & Aspinwall, 1998). There is also evidence that self-affirmed participants report persuasive health-risk information to be of greater quality (van Koningsbruggen et al., 2009) and more convincing (Reed & Aspinwall, 1998) than their non-affirmed counterparts.

Current Health Information Used Alongside a Self-Affirmation Manipulation

Given the important persuasive role of health information employed alongside a self-affirmation manipulation, there has been a lack of research into the features and format of such information. As pointed out in the review by Harris and Epton (2010), this seems to be a notable omission to the research in this field, and limits exploration in meta-analysis (Epton et al., 2015).

Most self-affirmation studies have used health information that has either been adapted from existing health promotion materials (Armitage et al., 2008; Epton & Harris, 2008; Good & Abraham, 2011; Meier et al., 2015; Norman & Wrona-Clarke, 2016) or formulated from information from websites or press releases (Arpan, Lee, & Wang, 2016; Düring & Jessop, 2015; Harris & Napper, 2005; Knight & Norman, 2016; Napper et al., 2009). Encouragingly, as one benefit of self-affirmation manipulations is that they can be used alongside existing health information materials to persuade people of their need to change (Harris & Epton, 2009), a growing number of self-affirmation studies have employed existing health information encouraging a healthy diet (Griffin & Harris, 2011), reduced alcohol consumption (Armitage et al., 2011; Scott et al., 2013), and smoking cessation (Harris et al., 2007; Memish et al., 2016). However, the relative efficacy of different types of health messages has not been systematically explored in

the literature, where the manipulation has typically been such that individuals are self-affirmed (or not) and are then exposed to the exact same health information.

While some studies have combined self-affirmation with messages aimed at increasing perception of efficacy (Good & Abraham, 2011) or have presented health information as either gain- or loss-framed (Mays & Zhao, 2016; Zhao & Nan, 2010), few messages presented alongside a self-affirmation manipulation have been theoretically developed or have manipulated key indicators of behaviour. One recent exception is the 'U@Uni' series of studies (Cameron et al., 2015; Epton et al., 2013, 2014), which combined self-affirmation, theory-based messages and implementation intentions to attempt to promote reduced alcohol and cigarette consumption, as well as encourage a healthy diet and exercise in first-year university students. Here, theory-based messages were based on other constructs known to underlie such behaviours from the Theory of Planned Behaviour (Ajzen, 1991, 2011).

Moreover, much of the research cited above has used traditional, statistical, text-based health information, such as articles, leaflets and brochures (e.g., Armitage et al., 2008; Düring & Jessop, 2015; Jessop et al., 2009; van Koningsbruggen et al., 2014), alongside self-affirmation to persuade people of their need to change behaviour. the health information presented in Harris and Napper (2005) was a leaflet and explained that "drinking a single alcoholic drink a day increases a woman's chance of developing breast cancer by around 6%, according to a major global study of woman's smoking and drinking behaviour". More recently, Kim and Niederdeppe (2016) presented information as text embedded within their online survey, which explained that "based on recent data, 77% of students report consuming, on average, four or fewer drinks when socializing in a setting with alcohol." (p. 265). Similarly, Jessop et al. (2014) incorporated information into their online survey, with the purpose to highlight "various

health-related consequences of failing to engage in sufficient exercise, including being at increased risk of colon cancer, breast cancer, cardiovascular disease and premature death" (p. 140).

Recently, self-affirmation studies have extended the type of health information employed, for example, by presenting information in pictorial form, such as images (Arpan et al., 2016; DiBello, Neighbors, & Ammar, 2015; Dillard et al., 2005; Harris et al., 2007; Kessels et al., 2016; Memish et al., 2016; Zhao, Peterson, Kim, & Rolfe-Redding, 2012), videos (Sherman et al., 2000, study 2) and posters (Scott et al., 2013). However, one frequently used alternative format of presenting health information that has been relatively unexplored in the self-affirmation literature is so-called experiential or *narrative* information.

Self-Affirmation and Narrative Health Information

The narrative health information format. Narratives present "concrete, emotionally interesting information about health, such as a "first-person account of someone who came to experience a particular condition that may also affect the message recipient" (de Wit, Das, & Vet, 2008, p. 110). As such, the narrative format directly contrasts with information presented in a statistical format – which presents "factual assertions and abstract data, such as pertinent prevalence estimates" (de Wit et al., 2008, p. 110) – typically used in the self-affirmation literature (for reviews exploring the relative format efficacy, see Allen & Preiss, 1997; Zebregs, van den Putte, Neijens, & de Graaf, 2015).

More broadly, a narrative is "a cohesive, causally linked sequence of events that takes place in a dynamic world subject to conflict, transformation, and resolution through non-habitual, purposeful actions performed by characters" (Braddock & Dillard, 2016, p. 447). In their reviewing of narrative definitions, de Graaf, Sanders, and

Hoeken (2016) conclude that a narrative has "at least one character, who experiences at

least one event" (p. 90). As such, therefore, a health information message can be

defined as a narrative if it presents a story that includes information about the setting,

the characters, and their motivations (Boeijinga, Hoeken, & Sanders, 2017).

Narrative health information can vary greatly in both content (e.g., health

behaviour focus, level of emotion portrayed, perspective) and context (e.g., perceived

similarity with character, medium in which is it presented). To date, however, it is not

fully understood which of these message features in isolation work to enhance or inhibit

the effectiveness of narratives (Boeijinga, et al., 2017; Braddock & Dillard, 2016; de

Graaf et al, 2016). However, with regard to narrative content, the evidence seems to

suggest that narratives are more persuasive when they are written from the first-person

perspective rather than the third-person perspective (e.g., de Graaf, Hoeken, Sanders, &

Beentjes, 2012), if they contain greater levels of emotion (e.g., Appel & Richter, 2010)

and are about health promoting behaviours rather than health compromising behaviours

(for a review see de Graaf et al, 2016).

With regard to context, while some empirical studies have found the perceived

similarity of a character to recipients to impact on subsequent persuasion (e.g., de Graaf,

2014), de Graaf et al. (2016) conclude in their review that, overall, the similarity of a

character to recipients does not seem to increase the persuasiveness of narrative

information. Narratives can also vary in the medium through which they are presented.

For example, narrative health information can be communicated in written form (e.g.,

Braverman, 2008; de Wit et al., 2008; Dillard et al., 2010) or using more visual media,

such as video clips, interviews, television, plays, or social media (e.g., Dunlop,

Wakefield, & Kashima, 2010; Winterbottom, Bekker, Conner, & Mooney, 2012). One

novel medium is the *graphic narrative* – akin to a comic – which refers to "juxtaposed

pictorial and other images in deliberate sequence, intended to convey information"
(McCloud, 1994, p. 9). Despite this range of potential formats, a recent meta-analysis
and review paper suggest that the format of the narrative information does not impact
on their subsequent persuasiveness (Braddock & Dillard, 2016; Graaf, et al., 2016).

Narrative health information is one form of health information that is becoming
increasingly available, so represents an important component of the information an
individual may encounter or seek relevant to health behaviour change (Ziebland &
Wyke, 2012). In the health domain, many studies have explored the impact of narrative
information and have broadly demonstrated positive effects, including in the context of
alcohol consumption (Braverman, 2008; Kim & Niederdeppe, 2016; Zebregs, van den
Putte, de Graaf, Lammers, & Neijens, 2015), smoking cessation (Houston et al., 2011),
UV exposure (Dillard & Hisler, 2015; Greene, Campo, & Banerjee, 2010), sexual
behaviour (Mevissen, Ruiter, Meertens, & Schaalma, 2010), screening (Borrayo,
Rosales, & Gonzalez, 2016; Dillard, Fagerlin, Cin, Zikmund-Fisher, & Ubel, 2010;
Murphy et al., 2015), and vaccination (Betsch, Ulshofer, Renkewitz, & Betsch, 2011; de
Wit et al., 2008; J. Kim & Nan, 2016).

Like self-affirmation, narrative information is thought to be persuasive because
the format reduces defensive responding (Braddock & Dillard, 2016; Moyer-Gusé,
2008; Slater & Rouner, 2002), as evidenced, for example, through lowering counter-
arguing to the health information (e.g., McQueen, Kreuter, Kalesan, & Alcaraz, 2011)
and increasing perceptions of vulnerability (de Wit et al., 2008). In particular, it is
theorised that narratives lower defensive processing by increasing engagement, which is
a "distinct mental process, an integrative melding of attention, imagery, and feelings"
(Green & Brock, 2000, p. 701). Such engagement does not generally involve critical
message scrutiny; indeed, narrative information increases persuasion through affective

processes and less systematic processing (Keer, van den Putte, de Wit, & Neijens, 2013; Kopfman, Smith, Ah Yun, & Hodges, 1998; Winterbottom, Bekker, Conner, & Mooney, 2008). As a result, therefore, narrative information may be less vulnerable to the aforementioned defensive biases that are commonly found when people encounter personally relevant health information.

Lastly, it is noteworthy that while a distinction has been made here between narrative and statistical forms of information, in reality many existing health promotion campaigns employ aspects of both. For example, Khangura, Bennett, Stacey, and O'Connor (2008) found that 84% of publically available patient decision aids – used in the medical context – include at least one illustrative, first-person narrative about the experiences of another patient in their position. In a health-behaviour change context, for example, *Dry January,* a national campaign that encourages people to stop drinking alcohol for the month of January, presents both numerical information regarding participation in their event (statistical component) alongside testimonials from previous Dry January participants (the narrative component) in promotional materials (Alcohol Concern, 2014).

Combining self-affirmation with health information presented in a narrative format. To date, however, there is little research exploring the effectiveness of self-affirmation manipulations in combination with narrative-type information, and the little that does exist has produced mixed results. Sherman (Sherman et al., 2000), for example, self-affirmed undergraduate students and then presented an AIDS educational video. The video was 12 minutes long and contained narrative accounts from six people living with AIDS. They found that self-affirmed participants were more likely to see themselves as being at greater risk for HIV, took more informational leaflets and purchased more condoms than their non-affirmed counterparts.

Since the commencement of the empirical work in the current thesis, Kim and Niederdeppe (2016) have tested the effects of self-affirmation on a text-based, fictitious narrative about university students' negative alcohol-related experiences. They found that self-affirmed participants, when presented with the narrative, did not differ from non-affirmed participants in their reported risk perceptions or optimism. In the 'U@Uni' studies, Epton and colleagues (Cameron et al., 2015; Epton et al., 2013, 2014) employed narratives as one type of theoretically-derived health message about alcohol consumption, smoking, fruit and vegetable consumption and physical activity, used alongside interventions of self-affirmation and implementation intentions. While the studies found an overall effect on smoking cessation (Cameron et al., 2015; Epton et al., 2014) and alcohol consumption (Cameron et al., 2015), the study design prevents identification of the effective parts of the intervention. Therefore, the combined effect of self-affirmation and narrative information is unknown.

However, given that one of the ways in which narrative health information is meant to be effective is that it reduces defensive processing, it is interesting to note that it remains unknown whether self-affirmation will enhance responding to a narrative. On the one hand, drawing on existing findings (Sherman et al., 2000) and extrapolating from work using more traditional forms of information (e.g., Harris & Napper, 2005), it may be expected that self-affirmation would increase open-minded responding to narrative information and help promote behaviour change, if the narrative is perceived as self-threatening. However, if narratives reduce defensive processing, there may be less defensive resistance for self-affirmation to ameliorate, suggesting there may be no added benefit to accrue from the manipulation. Moreover, as narrative information is typically case-based, it may be perceived as being relatively weak when exposed to the critical scrutiny that self-affirmation manipulations induce (Correll, Spencer, & Zanna,

2004; Griffin, Neuwirth, Giese, & Dunwoody, 2002; Klein & Harris, 2009). This may make narrative information appear less persuasive.

Accordingly, the first aim of the present research programme was to explore whether a self-affirmation manipulation would increase the efficacy of narratives in terms of promoting more open-minded responding, more positive cognitions indicative of motivations to change behaviour and greater likelihood of health behaviour change when combined with narrative health information. A variety of narrative formats was used throughout the current research programme, including text-only based narrative (Chapter 2), video narrative (Chapter 3), a graphic narrative (Chapter 4) and an existing health promotion campaign materials (Dry January) with narrative and statistical components (Chapter 5).

Moderators of Self-Affirmation Effects

Previous Research Exploring Potential Moderators of Self-Affirmation Effects

In their meta-analysis, Epton et al. (2015) found only limited evidence that the effects of self-affirmation were moderated by relatively abstract features of studies in the health domain (e.g., hazard proximity, manipulation task and proportions of white participant in the sample). However, it seems reasonable to assume that self-affirmation manipulations will not affect each individual in the same way (Harris & Epton, 2010). As such, work in this area has identified individual differences as potential moderators of self-affirmation effects, including spontaneous self-affirmation (Emanuel et al., 2016; Taber et al., 2015), self-esteem (Dijkstra & van Asten, 2014; Düring & Jessop, 2015), unrealistic optimism (Klein et al., 2010), perceptions of ambiguity in health messages (Klein, Hamilton, Harris, & Han, 2015) and the strength of health as a value (Pietersma & Dijkstra, 2011).

One relatively well-explored moderator in the self-affirmation literature is individual level of risk. Typically conceptualised as the extent to which a person is engaging in a particular health-risk behaviour measured at baseline (Harris et al., 2007), risk can function as an indicator of personal relevance of the health information. Accordingly, information that is personally relevant should be perceived as a threat to self-integrity (Harris & Epton, 2009). As a result, self-affirmation theory suggests that those who are experiencing psychological threat should benefit the most from self-affirming (Cohen & Sherman, 2014).

In support of this position, numerous studies have shown that individuals at higher risk levels benefit the most from self-affirmation. Such effects have been demonstrated in the context of alcohol consumption (Harris & Napper, 2005; Pavey & Sparks, 2012; Scott et al., 2013), smoking cessation (Armitage et al., 2008; DiBello et al., 2015; Harris et al., 2007), caffeine consumption (Sherman et al., 2000; van Koningsbruggen et al., 2009), UV exposure (Schüz et al., 2013), diet (Griffin & Harris, 2011) and diabetes screening (van Koningsbruggen & Das, 2009). However, the moderating effect of risk is not consistent across studies, with some reporting no significant effects on motivations to change behaviour (Epton & Harris, 2008; Zhao et al., 2012), effects only for those at moderate levels of risk (Klein & Harris, 2009) and potential negative effects of self-affirmation for low-risk individuals (Good et al., 2015).

While these studies collectively suggest that self-affirming seems to have greater benefit to those who are the most in need of health behaviour change (i.e., those at the highest health-risk), it is noteworthy that Epton et al. (2015) did not find evidence to support such effects in their meta-analysis. Specifically, they reported that personal relevance of the information – which was the "percentage of the sample at baseline not

meeting any guidelines recommended in the message" (p. 891) – did not significantly moderate the effects of self-affirmation; however, they note that this result should be interpreted with a degree of caution due to the small number of studies included in this test.

Systematic Processing as a Moderator of Self-Affirmation Effects

One core dispositional variable that might be expected to moderate the effects of self-affirmation is systematic processing. *Systematic processing* is characterised as "a comprehensive, analytic orientation in which perceivers access and scrutinize all informational input for its relevance and importance to their judgment task, and integrate all useful information in forming their judgments" (Chaiken, Liberman, & Eagly, 1989, p. 212).

Most research exploring systematic processing in the health domain suggests that engaging in systematic processing can promote better health-related outcomes. For example, when processing information systematically, individuals make an effort to understand the information and how it relates to them personally (e.g., Smerecnik, Mesters, Candel, De Vries, & De Vries, 2012), which can lead to more permanent positive attitudes being formed (Griffin, Neuwirth, Giese & Dunwoody, 2002), greater information seeking behaviour (Soanea, Schuberta, Lunnb & Pollard, 2015), greater risk perceptions (Natter & Berry, 2005), and more informed decision making regarding health choices (Etchegary & Perrier, 2007; van den Berg, Timmermans, ten Kate, van Vugt, & van der Wal, 2006).

As discussed in a previous section, there is evidence (e.g., Correll et al., 2004; Klein et al., 2011) to support the idea that self-affirming induces careful, extensive processing and critical scrutiny of health information, akin to systematic processing. It seems plausible, therefore, that individual tendencies to process health information

systematically would impact on the effect of self-affirmation on outcomes, such as indices of open-minded responding, cognitions indicative of motivations to change behaviour and health behaviour change. However, as far as the author is aware, no published study to date has explored the moderating role of systematic processing in the context of self-affirmation in the health domain.

An additional consideration relevant to the current research programme is that people's tendencies to process information systematically may influence their preferences for the format in which they receive personally relevant health information. For example, individuals low in the tendency to process health information systematically are inclined to focus on peripheral features of health information, rather than make effortful attempts to understand the content of the message (e.g., Griffin et al., 2002; Kahlor, Dunwoody, Griffin, Neuwirth, & Giese, 2003). As a result, presenting health information in a narrative format – which is specifically meant to be engaging on peripheral features – would seem to be in accordance with such preferences for receiving information. This pattern is reversed for those high in systematic processing, whose inclination for focusing on the content of health messages rather than the format (Griffin et al., 2002; Kahlor et al., 2003) may mean that they are less open to information presented in narrative form. However, as explained above, self-affirmation studies have typically employed relatively limited formats of health information, which assumes that participants have similar preferences for ways of processing information. In this context, preferences for engaging in systematic processing are likely to be important, meaning that a lack of consistency with an individual's preferences, or expectations, for receiving health information may comprise a rule of thumb that can be used to denigrate and resist the information.

Accordingly, a second aim of the current research programme was to investigate whether systematic processing moderates the impact of self-affirmation on responses to different formats of narrative information. In particular, the potential moderating impact of systematic processing on the capacity of self-affirmation to promote positive outcomes when presented with personally relevant health information was explored, to address the identified gap in the literature.

Thesis Overview

Research Questions and Overview

Two principal research questions were explored in the empirical work described in this thesis:

(1) Can self-affirmation be used in combination with narrative health information to promote greater levels of open-minded responding, more positive cognitions indicative of motivations to change behaviour and, ultimately, health behaviour change?

(2) Does the tendency to process information systematically moderate the effectiveness of a self-affirmation manipulation?

The two studies presented in Chapter 2 explore the impact of self-affirmation combined with personally relevant health information presented as a text-narrative detailing the link between alcohol consumption and breast cancer on indices of open-minded responding, cognitions indicating motivations to change behaviour and behaviour change. The study reported in Chapter 3 explores the impact of self-affirmation on responses when presented with narrative information in a video format regarding the risks of alcohol consumption. Chapter 4 investigates the persuasive impact of a graphic narrative (versus a non-graphic equivalent) about the benefits of exercise and tests whether self-affirming before the graphic narrative affects outcomes.

Finally, the study reported in Chapter 5 explores the impact of self-affirmation on responses to existing health promotion campaign materials incorporating both statistical and narrative information. In each of the studies just described, the moderating role of systematic processing is also investigated.

Analytical Approach

The exploratory and progressive nature of this research programme meant that while each study measured indices of open-minded responding, cognitions indicative of motivations to change behaviour, and health behaviour change, some variables were included in the initial studies but not later ones and vice versa (e.g., behavioural expectations, action plans, coping efficacy). Several variables common across studies that were not significantly affected in any study by the self-affirmation manipulation or the interaction between self-affirmation condition and systematic processing (e.g., mediating measures of other-related positive affect) are not reported in the thesis. Furthermore, several individual difference measures that might moderate the effects of self-affirmation (e.g., self-esteem, empathy, spontaneous self-affirmation) were also included in some studies but are not reported in the thesis in the interests of focus and brevity.

CHAPTER 2: Exploring Whether the Effects of Self-Affirmation on Responses to Narrative Health Information are Moderated by Systematic Processing

Abstract

Background There is limited evidence concerning whether self-affirmation affects responses to different types of information. The aims of the current research were to (1) explore the effects of self-affirmation, in combination with narrative health information detailing the risks of alcohol consumption, on open-minded responding to health information, cognitions indicative of motivation to change behaviour and alcohol consumption at follow-up and (2) test whether any effects were moderated by systematic processing.

Methods In two studies, 24 hours after completing a baseline measure of systematic processing, participants ($N_{Study\ 1} = 52$; $N_{Study\ 2} = 67$) were randomly allocated to a self-affirmation or control condition and then presented with narrative health information. Indicators of open-minded responding to health information and cognitions indicative of motivation to change behaviour were assessed immediately post-manipulation; alcohol consumption was assessed at 7-day follow-up. Study 2 additionally assessed engagement with the narrative post-manipulation.

Results In Study 1, the self-affirmation manipulation resulted in lower levels of message derogation and counter-arguing. Systematic processing moderated the impact of self-affirmation on behaviour and risk, such that self-affirmed individuals low in systematic processing reported consuming significantly less alcohol at follow-up, despite initially reporting lower levels of perceived risk. In Study 2, self-affirmation once again reduced counter-arguing. It also promoted lower intentions, less positive attitudes towards, and a weaker identity concerning, reducing alcohol consumption. Systematic processing moderated the effects of self-affirmation on some outcomes, such

that self-affirmed individuals low in systematic processing reported lower levels of perceived risk, lower relevance of the information and lower levels of negative affect.

Conclusion The results suggest some positive overall effects of self-affirmation on increasing open-minded responding to narrative information, but there was also evidence that self-affirmation reduced motivation to change behaviour. Furthermore, systematic processing appeared to moderate the impact of self-affirmation on some outcomes, by reducing open-minded responding to narrative health information for individuals low in systematic processing; however, self-affirmation also promoted behaviour change among these same individuals. These findings emphasise the importance of exploring the impact of self-affirmation on information presented in a narrative format and highlight the need to consider individual difference variables, such as systematic processing, when exploring self-affirmation effects.

Introduction

In 2014, nearly a quarter of all deaths in England and Wales were attributable to lifestyle causes that may have been avoidable with effective public health interventions (Office of National Statistics, 2016), meaning that promoting healthier lifestyles is a priority in the UK. However, a major challenge for successful health promotion is that people may resist potentially vital health information, responding defensively by rejecting the message and consequently not being persuaded of the need to change their behaviour (Keller, 1999; Liberman & Chaiken, 1992; Sherman, Nelson & Steele, 2000). Self-affirmation, the process of reflecting on core values or beliefs, has shown promising effects in apparently reducing such defensive resistance to personally relevant health information (e.g., Sherman, et al., 2000; Harris & Napper, 2005). However, to date, participants in self-affirmation studies have been exposed to a relatively limited range of health information formats and it is not clear whether the effects extend to other ways of communicating a given message. The current studies examine the effects of self-affirmation on information expressed in *narrative* form, a format that is in widespread use but contrasts in key ways with the *statistical* form typically used in self-affirmation studies. The studies also explored individual differences in the tendency to process information systematically as a possible moderator.

Self-Affirmation Theory as Applied to Health Behaviours

Research findings suggest that the target recipients of health campaigns may be motivated to dismiss or disregard personally relevant health information (for a review see van 't Riet & Ruiter, 2013). Ironically, individuals for whom the information is most relevant are often the most likely to respond defensively, meaning they remain unpersuaded of their need to behave in a healthy manner (Keller, 1999; Liberman &

Chaiken, 1992; Sherman, Nelson, & Steele, 2000). According to self-affirmation theory, one reason why people may respond defensively to relevant health information is because it threatens their self-integrity – the belief that the self is "adaptively and morally capable, that is, competent, good, coherent, unitary, stable, free of choice, capable of controlling important outcomes…" (Steele, 1988, p. 262). Being presented with health information may constitute a threat to self-integrity because such information compromises the ability to perceive oneself as an individual of worth and "adaptive and moral adequacy" (Steele, 1988, p. 263). Thus, in an attempt to restore self-integrity, individuals may employ a range of defensive biases, such as downplaying the information's personal importance or severity, or processing it with increased scrutiny (Sherman & Cohen, 2006). This, in turn, may discourage the individual from changing their health-detrimental behaviour.

Self-affirmation theory further proposes that defensiveness to health information can be reduced by offering people the opportunity to reflect upon their "cherished values, actions or attributes" (Harris & Epton, 2009, p. 963). Specifically, self-integrity can be restored by self-affirming some aspect of identity that is at least equally important as the presented health threat (Sherman & Cohen, 2006). This serves to reassure people of their self-adequacy which, in turn, secures their sense of self-worth. Thus reassured, the self-evaluative impact of the health information is reduced, thereby enabling the individual to appraise the health information and assess its personal relevance more open-mindedly (Cohen & Sherman, 2014). In support of this position, a growing body of evidence suggests that a self-affirmation manipulation can effectively reduce resistance to personally relevant health information and encourage positive health behaviour change. In their meta-analysis, Epton, Harris, van Koningsbruggen, Kane and Sheeran (2015) found effects of self-affirmation on message acceptance (d_+

= .17), intentions to change behaviour ($d_+ = .14$) and subsequent behaviour ($d_+ = .32$) (see also Sweeney & Moyer, 2015). These effect sizes are comparable in magnitude to those obtained for other health-behaviour change interventions (e.g., Johnson, Scott-Sheldon, & Carey, 2010).

However, the majority of studies have employed a limited range of health information presentation formats, which undermines the generalizability of the current findings. Specifically, the health information typically used in self-affirmation studies is text-based, static and impersonal, emulating the traditional health-promotion "leaflet" or brochure. Such health information typically used in self-affirmation studies is akin to that described as *statistical* information in recent research and reviews (Allen & Preiss, 1997; Winterbottom, Bekker, Conner, & Mooney, 2008; Zebregs, van den Putte, Neijens, & de Graaf, 2015). Although statistical health information is widely employed in health promotion contexts, it may have limited reach (Smerecnik et al., 2010) and impact (e.g., Thompson & Haddock, 2012). Moreover, statistical information is not the only type of information presented in health promotion contexts; one frequently used alternative is so-called experiential or *narrative* information.

Self-Affirmation and Narrative Health Information

Narrative information – which consists of "concrete, emotionally interesting information, such as a first-person account of someone who came to experience a particular condition that may also affect the message recipient" (de Wit, Das, & Vet, 2008, p. 110) – is an increasingly popular format for presenting health information. For example, narratives are widely and increasingly available on website and in social media. The Health Talk website (www.healthtalks.org) solely presents narrative health information and has become increasingly popular: there were five million website visits in 2015, which was more than double the figure for the previous year (Health Talk,

2016). Narrative information, therefore, forms an important component of the information an individual may encounter or seek that is relevant to health behaviour change (Ziebland & Wyke, 2012).

Evidence suggests that narrative information can be engaging and persuasive (see Winterbottom, Bekker, Conner, & Mooney, 2008; Zebregs, van den Putte, Neijens, & de Graaf, 2015 for review and meta-analysis). In the health domain, exposure to narrative health information has been associated with heightened perceptions of risk (de Wit et al., 2008; Janssen, van Osch, de Vries, & Lechner, 2012), stronger affective responses (Bollinger & Kreuter, 2012; McQueen, Kreuter, Kalesan, & Alcaraz, 2011; Zebregs, et al., 2015), more positive cognitions (Mazor, Baril, Dugan, Spencer, Burgwinkle, & Gurwitz, 2007; Murphy et al., 2013), greater motivation for change (Zebregs et al., 2015) and actual behaviour change (Lemal & Van den Bulck, 2010; Murphy et al., 2015).

However, research has paid little attention to how self-affirmation influences responses to narrative information. Sherman, Nelson, and Steele (2000, Study 2) found that self-affirmation resulted in more open-minded appraisal of a video which presented personal narrative accounts of being diagnosed with AIDS. However, Kim and Niederdeppe (2016) found no effects of self-affirmation on any outcomes, including risk, when presented with a fictional narrative text. Furthermore, Epton and colleagues (Cameron et al., 2015; Epton et al., 2013) incorporated narrative videos into an interventional toolkit including self-affirmation and implementation intentions but, due to the study design incorporating several theoretical approaches known to influence behaviour, the effectiveness of utilising narrative information alongside a self-affirmation manipulation is unknown.

Given the prevalence of narrative information, it is important to establish whether such information is also amenable to self-affirmation interventions. Consequently, the first aim of the studies presented in this paper was to explore whether self-affirmation in conjunction with narrative health information would increase levels of open-minded responding, promote more positive cognitions indicative of motivations to change behaviour and, ultimately, encourage health behaviour change. It is noteworthy that two elements of existing findings and theory raise the prospect that the effects of self-affirmation when combined with narrative information may not be the same as that reported when self-affirmation has been combined with statistical information. First, theoretical accounts of the impact of narrative information suggest that it may have beneficial consequences in reducing defensive resistance (Green & Brock, 2000) and there is some evidence to support this (de Wit et al., 2008; Graesser, Olde, & Klettke, 2002). Thus, when narrative information is used, there may be less defensive resistance for self-affirmation to ameliorate. Second, self-affirmation has been shown to boost participants' critical scrutiny of health information (Correll, Spencer, & Zanna, 2004; Klein, Harris, Ferrer, & Zajac, 2011), suggesting that self-affirmed individuals do not simply accept health information without carefully processing it for personal relevance and persuasiveness. Arguably, narrative information may be perceived as relatively weak when exposed to any such systematic mind-set induced by self-affirmation (Griffin, Neuwirth, Giese, & Dunwoody, 2002; Petty & Cacioppo, 1986), which may make it appear less rather than more persuasive.

Individual Differences in Systematic Processing as a Moderator of Self-Affirmations Effects

One core variable that might be expected to moderate the impact of narrative health information is systematic processing. *Systematic processing* is defined as "a

comprehensive, analytic orientation in which perceivers access and scrutinize all informational input for its relevance and importance to their judgment task, and integrate all useful information in forming their judgments" (Chaiken, Liberman, & Eagly, 1989, p. 212). When processing information systematically, individuals make an effort to understand the information and how it relates to them personally (e.g., Smerecnik, Mesters, Candel, De Vries, & De Vries, 2012). Indeed, systematic processing allows people to appraise information for its content and arguments, rather than for peripheral features such as format and context (Chen & Chaiken, 1999; Kahlor, Dunwoody, Griffin, Neuwirth, & Giese, 2003), leading to more informed decision making (van den Berg, Timmermans, ten Kate, van Vugt, & van der Wal, 2006).

The format of narrative health information, however, is conducive to persuasion through lower levels of systematic processing and affective processes, (de Wit et al., 2008; Kopfman, Smith, Ah Yun, & Hodges, 1998; Winterbottom, Bekker, Conner, & Mooney, 2012). Previous research supports the position that individuals low in the tendency to process health information systematically – i.e., people who show a tendency to focus more on peripheral features of health information than to make effortful attempts to understand the content of the message (e.g., Griffin et al., 2002; Kahlor, Dunwoody, Griffin, Neuwirth, & Giese, 2003) – would be relatively open to health information presented in a narrative format. This pattern is reversed for those high in systematic processing, whose preference to focus on the content of health messages rather than the format (e.g., Griffin et al., 2002; Kahlor, Dunwoody, Griffin, Neuwirth, & Giese, 2003) may mean they are less open to the narrative. These preferences – and expectations – for the ways in which information relevant to people's health are presented to them may comprise a heuristic that can be used to denigrate and resist health information.

Moreover, it seems plausible that systematic processing might moderate the effects of self-affirmation on responses to information presented in a narrative format. Critically, theoretical accounts of the impact of self-affirmation on the response to health information hypothesise that it does so by inducing systematic processing, as indicated by differentiation between strong and weak arguments (Correll, Spencer, & Zanna, 2004; Griffin & Harris, 2011; Sherman & Cohen, 2006). By extension, it seems plausible to postulate that for individuals low in systematic processing – who typically may be persuaded by narrative information – self-affirmation will heighten systematic processing, resulting in reduced persuasion by narrative information. In contrast, for individuals high in systematic processing, the affirmation manipulation may serve to exacerbate their high systematic processing tendencies and hence make them more critical of the information. Alternatively, if we take the more generous line that affirmation might reduce people's defensive response to information, self-affirmation here might actually make individuals high in systematic processing more open to information presented in narrative format, whether it meets their need for high scrutiny or not.

The Current Studies

Two studies are presented. These aimed to explore the effects of self-affirmation on (i) measures of open-minded responding to health information (e.g., message acceptance) and cognitions indicative of motivation to change behaviour (e.g., intentions) and (ii) actual behaviour change, after exposure to narrative information

detailing the link between alcohol consumption and breast cancer[2]. Moreover, the potential moderating role of systematic processing was explored in both studies.

Alcohol consumption was chosen as the target behaviour as it constitutes an important health issue in the UK: Alcohol is a causal factor in more than 60 medical conditions, including mouth, throat, stomach, liver and breast cancers, high blood pressure, cirrhosis of the liver, and depression (Alcohol Concern, 2016). Critically, an estimated 6% of all female breast cancers are linked to alcohol consumption (Cancer Research UK, 2014) and, importantly, this risk is not limited to heavy drinkers. A recent meta-analysis has shown that even light alcohol consumption (up to one drink per day) can increase the risk of breast cancer by 5% compared to non-drinkers (Bagnardi et al., 2013), indicating that this is a risk relevant to a large proportion of women. Additionally, while there has been a decrease in the average weekly consumption of alcohol over the last five years for men, there has been no such decrease for women (NatCen Social Research, 2016). Considering the health risks that this poses, health information that successfully promotes reduced alcohol consumption is critical; moreover, a self-affirmation manipulation may be valuable in this regard to help

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[2] A statistical version of the health information was also created in the current research because we were interested in exploring whether individual differences in systematic processing similarly moderated the effects of self-affirmation on responses to statistical health information. However, the goals of exploring responses to the statistical version of the health information were ancillary to the primary aims of the thesis regarding exploring narrative message formats in combination with self-affirmation. Therefore, these findings are not reported in this chapter; however, in case they are of interest, the corresponding method and results sections are reported in Appendix A.

overcome the tendency for individuals to resist or reject alcohol-reduction information (Brown, Stautz, Hollands, Winpenny, & Marteau, 2016; Ringold, 2002).

Study 1

Study 1 tested the effects of self-affirmation and individual differences in systematic processing on responses to a narrative message detailing the link between alcohol consumption and breast cancer. Participants either completed a self-affirmation manipulation or control equivalent before being presented with health information in the form of a narrative account. This research was specifically designed to address two research questions; firstly, to ascertain whether there would be any benefit of combining self-affirmation with information presented in a narrative format, and secondly, whether systematic processing would moderate any effects. In line with the reasoning outlined above, no specific directional hypotheses were made regarding either of these research questions.

Method

Design and Procedure

Study 1 used a one-way between-subjects experimental design, with self-affirmation condition (self-affirmation vs. control) as the independent variable. Potential participants were contacted via social media (Facebook or Twitter) and asked if they would be willing to complete a study exploring their beliefs about alcohol consumption. This introductory message contained a weblink to the initial (Baseline) questionnaire. Twenty-four hours after completing this questionnaire, participants who had supplied an email address were asked to complete the Time 1 questionnaire, and were randomly allocated to the affirmation ($n = 27$) or control ($n = 25$) condition by the host website, Survey Gizmo. Seven days after completing the Time 1 questionnaire, participants were contacted again via email asking them to complete the Follow-up questionnaire. All

emails contained a weblink to the relevant questionnaire. To encourage participation and reduce attrition, participants who completed all of the questionnaires were entered into a £100 cash prize draw.

Participants

Fifty-three female participants who met the inclusion criteria (i.e., they described their ethnicity as 'White') and who had completed the Baseline questionnaire responded to the Time 1 questionnaire 24 hours later. One participant (in the self-affirmation condition, $n = 1$) was removed from subsequent analyses, as their response to the health information check (see *Materials* section) failed to confirm that they had read the health information. Accordingly, the final sample consisted of 52 participants. The mean age of the sample was 26.26 years ($SD = 7.56$; range = 18-61) and the majority were not students (73.08%). Forty-eight participants responded to the follow-up questionnaire, resulting in an attrition rate of 7.69%.

Materials

Participants completed an online questionnaire at three time points (Baseline; Time 1; Follow-up). The first page of each questionnaire contained instructions about consent and ethics and, unless stated otherwise, materials were presented in the order described below. All items were measured on 7-point scales ranging from *strongly disagree* [1] to *strongly agree* [7] unless otherwise indicated. A mean score was calculated for each participant on each scale, with higher scores indicating greater levels of the construct in question.

Baseline questionnaire.

Demographic information. Participants were asked to indicate their gender, age, ethnicity and employment status (*student, employed, unemployed, other*).

Systematic processing. The tendency to systematically process information was measured with the five systematic processing items of the Risk Information Seeking and Processing (RISP) scale (adapted from Griffin, Neuwirth, Giese, & Dunwoody, 2002): "After I encounter information about the health risks of alcohol consumption, I am likely to stop and think about it", "If I need to act on the health risks of alcohol consumption, the more viewpoints I get the better", "After thinking about the health risks of alcohol consumption, I have a broader understanding", "When I encounter information about the health risks of alcohol consumption, I read or listen to most of it, even though I may not agree with its perspective" and "It is important for me to interpret information about the health risks of alcohol consumption in a way that applies directly to my life". Responses were given on a 5-point scale ranging from *strongly disagree* [1] to *strongly agree* [5], $\alpha = .72$.

Baseline alcohol attitude. Baseline attitudes were measured using items adapted from Ajzen and Fishbein (1980). Participants were presented with the stem: "Overall, my overall attitude towards drinking alcohol is…" to which they responded on two scales (*extremely negative* [1] to *extremely positive* [7] and *extremely unfavourable* [1] to *extremely favourable* [7]), $r(51) = .81$, $p < .001$.

Time 1 questionnaire.

Demographic information. Participants reported their name and email address.

Time 1 alcohol intake. Participants reported the type of alcohol (e.g., beer, spirit), type of container (e.g., small glass, pint, single measure) and the number of each type of drink they had consumed on each day over the previous 7 days using the adapted version (Armitage, Harris, & Arden, 2011) of the timeline fallback technique (Sobell & Sobell, 1992). The total number of units consumed by each participant was then calculated using the UK NHS alcohol unit calculator (NHS Choices, 2013).

Self-affirmation manipulation. A method used widely in previous studies (e.g., Harris et al., 2014; Sherman et al., 2009) was used in the current study to self-affirm participants. Participants read that values are "moral principles and standards by which people try to live their lives" and were then given a list of 10 values that other people had described as important to them (conscientiousness, spirituality and religiousness, compassion, intelligence, generosity, trustworthiness, creativity, hedonism, friendliness, kindness, and spontaneity). Using this list, participants in the self-affirmation condition were asked to "select the value that is MOST important to YOU", whereas in the control condition, participants were asked to select "the value that is LEAST important to YOU". Participants in both conditions were told that they could choose a value not on the list, should they so wish. Those in the self-affirmation condition were then asked to write three reasons why the value they chose was important to them and provide an example of something they had done to demonstrate its importance. For participants in the control condition, the instructions asked them to write reasons why the value they chose as being least important may be important to someone else, and provide an example of something that person could do to demonstrate its importance.

Immediately after the self-affirmation manipulation participants were asked to respond to the question "How important to you is the value you chose to write about?" (*extremely unimportant* [1] to *extremely important* [7]).

Self-affirmation manipulation checks. Two manipulation check measures (Napper, Harris & Epton, 2009) were placed after the Time 1 dependent measures to retrospectively assess the success of the self-affirmation manipulation: three bi-polar items measured attributes "The task on values made me think about...", *things I don't like about myself* [1] - *things I like about myself* [7], *things I'm bad at* [1] - *things I'm good at* [7], *things I don't value about myself* [1] - *things I value about myself* [7], α

= .81, and two items measured identity and values "The task made me aware of…"

"…who I am" and "…my values (the standards and principles by which I try to live my

life)", $r(51) = .90$, $p < .001$.

Narrative health information. A narrative leaflet informed the reader that even

light alcohol consumption could increase their risk of developing breast cancer. Based

on a 2010 Cancer Research UK (CRUK) leaflet, the narrative leaflet included true

statements and was designed to be a similar size and colouring to the original CRUK

leaflet. In total, the narrative leaflet was approximately 500 words in length, of which

235 words specifically presented narrative health information.

The leaflet – entitled "Drink less alcohol, cut your breast cancer risk" – was in

three sections: introduction, a specific narrative section, and information about alcohol.

The leaflet firstly presented the prevalence of alcohol-related cancer deaths in the UK.

The narrative section then introduced 'Sam' as a person who had developed breast

cancer as a consequence of her relatively low-level alcohol consumption. The narrative

was closely based on an anonymous interview on the Health Talks Online (2012)

website with a 62-year-old female who had been diagnosed with breast cancer. The

narrative section opened with "I hadn't had anybody in my family with breast cancer"

and continued to present Sam to be someone who enjoyed a drink but did not regularly

exceed the UK Government guidelines for alcohol consumption ("I always have drunk

alcohol, but not loads. I tried to stick to daily and weekly recommendations, which I

did, most of the time"). Sam went on to describe a conversation with a doctor who

confirmed that "drinking alcohol is a risk factor for developing breast cancer" because it

increases the levels of oestrogen in the body. Sam continued to say that "it's not always

the case that everyone that drinks gets breast cancer but I feel with myself - because I

have no history of breast cancer in the family or any other risk factors I've read about -

that it's probable that my breast cancer was related to drinking". The narrative section of the leaflet then concluded with "So, if I had my time again I would make sure that I drank less".

Health information check. Participants were asked what disease the health information related to alcohol consumption in order to confirm that they had read it.

Dependent measures.

Open-minded responding to health information. The first set of dependent measures assessed aspects of open-minded responding to health information, as follows.

Message acceptance. Message acceptance was measured with two items (Harris & Napper, 2005), "How believable did you find the content of the information" (*unbelievable* [1] to *believable* [7]) and "How convincing did you find the content of the information? (*unconvincing* [1] to *convincing* [7]), $r(51) = .71$, $p < .001$.

Personal relevance. Personal relevance was measured using two items (Napper, Harris, & Epton, 2009): "The information was relevant to me" and "I thought about how the information was personally relevant to me", $r(51) = .44$, $p < .001$.

Message derogation. Message derogation was measured with two items (Ruiter, Verplanken, Kok, & Werrij, 2003), "The information was distorted" and "The information was exaggerated", $r(51) = .61$, $p < .001$.

Counter-arguing. Counter-arguing was assessed with three items (Silvia, 2006): "I was criticising the information", "I was thinking of points that went against the information's arguments", and "I was feeling sceptical of the information's arguments", $\alpha = .82$.

Negative affect. Negative affect was measured using four items (Griffin & Harris, 2011):"How much did the information make you feel tense?" (*not at all tense* [1] to *very tense* [7]), "How much did the information make you feel anxious?" (*not at*

all anxious [1] to *very anxious* [7]), "I felt fearful" and "I worry about the consequences of my current level of alcohol consumption", α = .84.

Perceived risk. Risk was measured with four items (Janssen, van Osch, Lechner, Candel, & de Vries, 2012; Napper et al., 2009): "If I don't cut down on my alcohol consumption, I will feel very vulnerable to breast cancer", "How likely do you think YOU are to develop breast cancer if you continue with your current level of alcohol consumption?" (*not at all likely* [1] to *very likely* [7]), "If I don't reduce the amount of alcohol I drink, I feel that my chances of getting breast cancer at some point in my life are..." (*very small* [1] to *very big* [7]) and "If I don't reduce the amount of alcohol I drink in the next 7 days by at least 2 units, I would feel vulnerable to getting breast cancer at some point in my life", α = .80.

Cognitions indicative of motivation to change behaviour. The second set of dependent measures assessed aspects of cognitions indicative of motivation to change behaviour. Items assessing cognitions (intention, identity, attitude, and anticipated regret) were framed in terms of reducing alcohol consumption by at least 2 units of alcohol in the 7-day period between the Time 1 and Follow-up questionnaires, but are truncated below for ease of reading.

Intention. Intentions were measured by two items (Harris & Napper, 2005): "I intend to reduce the amount of alcohol I drink" (*definitely do not* [1] to *definitely do* [7]) and "Do you intend to reduce the amount of alcohol you drink?" (*definitely do not intend to* [1] to *definitely intend to* [7]), $r(51) = .98$, $p < .001$.

Identity. Identity was measured using three items (adapted from Sparks & Shepherd, 1992): "I think of myself as the type of person who would want to reduce the amount of alcohol I drink", "Reducing the amount of alcohol I drink is an important

part of who I am" and "I am the type of person who would reduce the amount of alcohol I drink", α = .86.

Attitudes. Attitudes were measured using two items adapted from Abraham and Sheeran (2004). Participants were presented with the stem: "My attitude towards reducing the amount of alcohol I drink is..." to which they responded on two semantic differential scales (*negative* [1] to *positive* [7], and *unfavourable* [1] to *favourable* [7], $r(51) = .95, p < .001$.

Anticipated regret. Anticipated regret towards not reducing alcohol consumption was measured with two items (Conner, Godin, Sheeran, & Germain, 2013): "If I did NOT reduce the amount of alcohol I drink, it would bother me" and "If I did NOT reduce the amount of alcohol I drink, I would regret it" (*very unlikely* [1] to *very likely* [7]), $r(51) = .84, p < .001$.

History of breast cancer. Participants were asked to respond to three statements to ascertain their past experience of breast cancer: "Have you ever been diagnosed as having breast cancer?", "Is there a history of breast cancer in your family?" and "Have any of your friends ever been diagnosed as having breast cancer" (*yes/*no; adapted from Jessop, Simmonds, & Sparks, 2009).

Follow-up questionnaire[3].

Alcohol intake at follow-up. Participants completed the same measure of alcohol consumption as used in the Time 1 questionnaire.

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[3] Further measures of cognition were also assessed at this time point but analyses pertaining to these are not presented further here because they were secondary outcomes and ancillary to the main aims of the study. These measures were: intentions, perceived efficacy, coping efficacy, and behavioural expectations.

Debrief. Participants completed a funnel debrief (from Chartrand & Bargh, 1996) to establish whether they had correctly identified the purpose of the study. None had.

Results

The mean number of units participants reported consuming in a typical 7-day period at baseline was 9.18 ($SD = 11.29$; *Range* = 0 - 47). Means and standard deviations for all baseline measures by condition are shown in Table 1 and correlations between dependent variables are reported in Appendix A.

Table 1

Means (and SDs) for all Baseline Measures by Condition in Study 1

	Self-affirmation	Control
Systematic processing	3.44 (0.80)	3.58 (0.60)
Baseline attitude towards alcohol	4.63 (1.30)	4.44 (0.94)
Age (years)	27.15 (9.48)	25.44 (4.93)
Time 1 alcohol intake (units last 7-days)	6.69 (8.43)	11.59 (13.20)

Preliminary Analyses

Preliminary analyses were conducted to explore whether responders and non-responders at follow-up differed on measures assessed pre-manipulation. One-way ANOVAs revealed no significant differences in terms of systematic processing scores, $F(1, 52) = 0.05$, $p = .819$, $\eta_P^2 = .001$, baseline attitude, $F(1, 52) = 1.27$, $p = .266$, $\eta_P^2 = .025$, or time 1 alcohol intake, $F(1, 52) = 0.00$, $p = .975$, $\eta_P^2 = .000$. There were, however, significant differences in age, with responders at follow-up being significantly younger than non-responders, $F(1, 52) = 6.76$, $p = .012$, $\eta_P^2 = .117$. Controlling for age in the subsequent analyses did not alter the pattern of results; therefore, for clarity, results are reported without controlling for age. Chi-square analyses revealed no

significant association between responding at follow-up and condition, $\chi^2(1, N = 52) = 0.18$, $p = .670$, or employment status, $\chi^2(1, N = 52) = 4.29$, $p = .231$.

Further preliminary analyses were conducted to explore whether there were any differences between conditions on measures assessed pre-manipulation. One-way ANOVAs revealed no significant difference between conditions in age, $F(1, 50) = 0.65$, $p = .425$, $\eta_p^2 = .013$, baseline systematic processing score, $F(1, 50) = 0.23$, $p = .632$, $\eta_p^2 = .005$, or time 1 alcohol intake, $F(1, 51) = 2.61$, $p = .113$, $\eta_P^2 = .049$. A series of chi-square analyses revealed that there was no association between condition and employment status, $\chi^2(3, N = 52) = 4.29$, $p = .231$, or family history of breast cancer, $\chi^2(1, N = 50) = 1.05$, $p = .306$. It was not possible to test whether there was an association between condition and history of breast cancer for the participant or their friends as none indicated they had any personal history or family history of breast cancer.

There was a significant effect of condition on the importance of the value selected: as expected, participants in the self-affirmation condition chose to write about a more important value ($M = 6.30$, $SD = 1.17$) than those in the control condition ($M = 3.31$, $SD = 1.78$), $F(1, 51) = 45.99$, $p < .001$, $\eta_p^2 = .474$. The effect of self-affirmation condition on the retrospective self-affirmation manipulation check items revealed that participants in the self-affirmation condition reported significantly higher scores on attributes ($M = 5.33$, $SD = 1.32$) than those in the control condition ($M = 4.45$, $SD = 1.16$), $F(1, 48) = 6.24$, $p = .016$, $\eta_P^2 = .115$. There was also a marginally significant effect of self-affirmation on identity and values, with those in the self-affirmation condition ($M = 5.36$, $SD = 1.47$) reporting higher scores than those in the control condition ($M = 4.56$, $SD = 1.58$), $F(1, 48) = 3.42$, $p = .071$, $\eta_P^2 = .066$.

Main Analyses

Mean scores on all of the dependent variables by condition at Time 1 are given in Table 2.

Effects of self-affirmation and systematic processing on indices of open-minded responding to health information and cognitions indicative of motivation to change behaviour. A series of moderated hierarchical regression analyses was conducted to (i) test the hypothesis that self-affirmation would have a main effect on each measure of open-minded responding to the health risk information and cognitions indicative of motivation to change behaviour and (ii) determine whether systematic processing moderated any impact of self-affirmation on these outcomes. For each analysis, condition (dummy coded; control = 0, self-affirmation = 1) was entered as a predictor at step 1, mean-centred systematic processing scores were entered at step 2, and the interaction term between condition and mean-centred systematic processing was entered at step 3. Resultant analyses are reported in Tables 3 - 5. Significant interactions were decomposed using simple slopes analyses (Aiken & West, 1991) in which the dependent variable was regressed onto condition for those with low (1 *SD* below the mean), mean and high (1 *SD* above the mean) systematic processing scores. Analyses are only reported in text if they revealed either a significant main effect of self-affirmation or significant self-affirmation X systematic processing interaction.

Main effect of self-affirmation. Analyses revealed that there was a main effect of self-affirmation (entered at step 1) on message derogation (ß = -.32, *p* = .024) and counter-arguing (ß = -.37, *p* = .007). Participants in the self-affirmation condition reported lower levels of message derogation and counter-arguing than did those in the control condition.

Table 2

Means (and SDs) for all Baseline Measures by Condition in Study 1

	Self-affirmation	Control
Time 1 questionnaire		
Indices of open-minded responding to health information		
Message acceptance	5.22 (1.35)	5.00 (1.53)
Personal relevance	4.80 (1.66)	5.46 (1.08)
Message derogation	2.89 (1.10)	3.65 (1.16)
Counter-arguing	2.54 (1.26)	3.71 (1.50)
Negative affect	3.10 (1.59)	3.00 (1.17)
Risk	2.24 (0.95)	2.67 (1.49)
Cognitions indicative of motivation to change behaviour		
Intention	3.31 (2.01)	3.77 (1.99)
Identity	3.63 (1.83)	3.55 (1.45)
Attitude	4.70 (1.71)	4.63 (1.52)
Anticipated regret	2.48 (1.85)	2.69 (1.72)
Follow-up questionnaire		
Alcohol intake at follow-up (units last 7-days)	5.17 (5.90)	9.90 (11.94)

Moderation by systematic processing. Analyses revealed that systematic processing moderated the impact of self-affirmation on risk perceptions, as evidenced by the fact that the interaction term (entered at Step 3) significantly increased the variance accounted for by the model, $\Delta F (1, 48) = 5.98, p = .018, \Delta R^2 = .107$. Simple slopes revealed that there was a significant effect of self-affirmation on risk perceptions

when systematic processing was low, $\beta = -.46$, $t(51) = -2.38$, $p = .021$ (Figure 1), such that individuals in the self-affirmation condition reported lower risk perceptions for developing breast cancer from their current levels of alcohol consumption compared to those in the control condition. There was no impact of the self-affirmation manipulation on risk perceptions for those with mean, $\beta = -.13$, $t(51) = -0.95$, $p = .347$, or high levels of systematic processing, $\beta = .23$, $t(51) = 1.27$, $p = .246$.
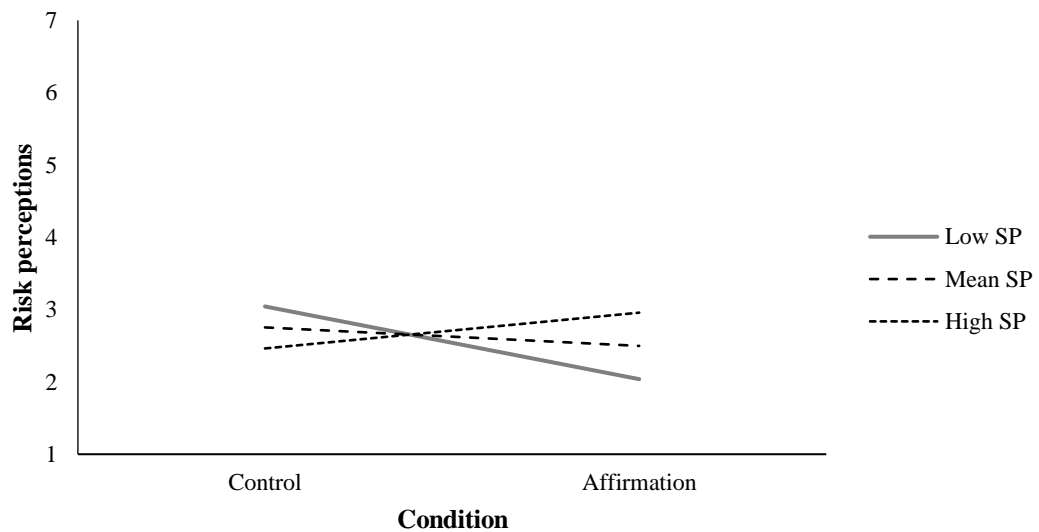
Figure 1. Risk perceptions regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

Table 3

Summary of Hierarchical Multiple Regression Analyses Predicting Indicators of Open-Minded Responding (Part 1) in Study 1

Variables entered	Message acceptance			Personal relevance			Message derogation			Counter-arguing		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.06	.10	.10	-.22†	-.23†	-.23†	-.32*	-.39*	-.39*	-.37**	-.39**	-.39**
Systematic processing		.23	.56*		.24†	.13		.07	.36		-.28*	-.33
Condition X Systematic processing			-.39			.13			-.34			.06
R^2	.007	.060	.108	.062	.121	.127	.100	.105	.142	.139	.218	.219
Model F	0.33	1.54	1.90	3.23†	3.30*	2.27†	5.43*	2.81†	2.59†	7.89**	6.68**	4.39**
ΔR^2		.052	.048		.059	.006		.005	.037		.079	.001
ΔF		2.73	2.51		3.23†	0.30		0.27	2.03		4.84*	0.07

$^\dagger p < .10$, $* p < .05$, $** p < .01$

Table 4

Summary of Hierarchical Multiple Regression Analyses Predicting Indicators of Open-Minded Responding (Part 2) in Study 1

Variables entered	Negative affect			Risk		
	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	-.04	-.03	-.03	-.13	-.12	-.13
Systematic processing		.27†	.17		.19	-.29
Condition X Systematic processing			.12			.58*
R^2	.002	.075	.079	.017	.054	.101
Model F	0.09	1.94	1.35	0.86	1.37	3.00*
ΔR^2		.073	.005		.037	.107
ΔF		3.38†	0.23		1.88	5.98*

†$p < .10$, *$p <. 05$

Table 5

Summary of Hierarchical Multiple Regression Analyses Predicting Cognitions Indicative of Motivation to Change Behaviour in Study 1

Variables entered	Intention			Identity			Attitude			Anticipated regret		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	-.16	-.16	-.17	-.02	.01	.01	.03	.05	.05	-.11	-.10	-.10
Systematic processing		.02	-.39		.37**	.09		.27	.08		.19	.06
Condition X Systematic processing			.48†			.38			.22			.15
R^2	.026	.026	.099	.000	.138	.174	.001	.071	.085	.013	.049	.056
Model F	1.30	0.64	1.72	0.01	3.83*	3.31*	0.05	1.82	1.46	0.65	1.24	0.93
ΔR^2		.000	.073		.137	.037		.070	.015		.036	.007
ΔF		0.01	3.79†		7.63**	2.10		3.60†	0.76		1.81	0.36

$^{\dagger}p < .10$, $*p <. 05$, $**p < .01$

Effects of self-affirmation and systematic processing on reported alcohol consumption at follow-up. Hierarchical multiple regression analysis was conducted to determine the effect of the self-affirmation manipulation, systematic processing and the interaction between these two variables on alcohol consumption at follow-up. Accordingly, the number of units of alcohol consumed in the previous 7 days at Time 1 was entered as a predictor at step 1, condition (dummy coded; control = 0, self-affirmation = 1) was entered as a predictor at step 2, mean-centred systematic processing scores were entered at step 3 and the interaction term between condition and systematic processing entered at step 4.

As can be seen in Table 6, at step 1, time 1 alcohol consumption significantly contributed to the prediction of participants' alcohol consumption at follow-up, $F(1, 45)$ = 8.58, p = .005, R^2 = .163. Condition, entered at step 2, failed to significantly predict participants' follow-up alcohol consumption, $F(1, 44)$ = 1.74, p = .195, R^2 = .032, and the inclusion of systematic processing at step 3, did not significantly increase the amount of variance explained by the model, $\Delta F(1, 43)$ = 0.00, p = .984, ΔR^2 = .000. Critically, however, the inclusion of the interaction term at step 4 did significantly increase the amount of variance in alcohol consumption at follow-up accounted for by the model, $\Delta F (1, 42)$ = 5.71, p = .022, ΔR^2 = .098, indicating that systematic processing moderated the association between self-affirmation and alcohol consumption at follow-up. Simple slopes revealed that there was a significant effect of self-affirmation on follow-up alcohol consumption when systematic processing was low, β = -.55, $t(46)$ = -2.69, p = .010 (Figure 2), such that individuals in the self-affirmation condition reported lower alcohol consumption at follow-up than those in the control condition. There was no impact of the self-affirmation manipulation for individuals with mean, β = -.20, $t(46)$

= -1.50, p = .142, or high levels of systematic processing, β = .15, $t(46) = 0.82$, p = .417.

Table 6

Summary of Hierarchical Multiple Regression Analyses Predicting Alcohol Consumption at Follow-up (Units) in Study 1

Variables entered	Alcohol consumption at follow-up			
	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 4
Time 1 alcohol intake	.41**	.38**	.37*	.31*
Condition		-.17	-.17	-.20
Systematic processing			-.03	-.52*
Condition X Systematic processing				.58*
R^2	.166	.192	.193	.304
Model F	8.94**	5.22**	3.42*	4.58**
ΔR^2		.026	.001	.111
ΔF		1.42	0.04	6.72*

[†]$p < .10$, *$p <. 05$, **$p < .01$, ***$p < .001$

Discussion

There was some evidence for the hypothesis that self-affirmation had a main effect on outcomes when used in combination with narrative information. Specifically, those in the self-affirmation condition reported lower levels of message derogation and counter-arguing in response to the narrative health information. There was also some support for the hypothesis that systematic processing might moderate the impact of self-affirmation on outcomes. In particular, for risk perceptions, the pattern of findings indicated that people low in systematic processing reported lower risk when self-
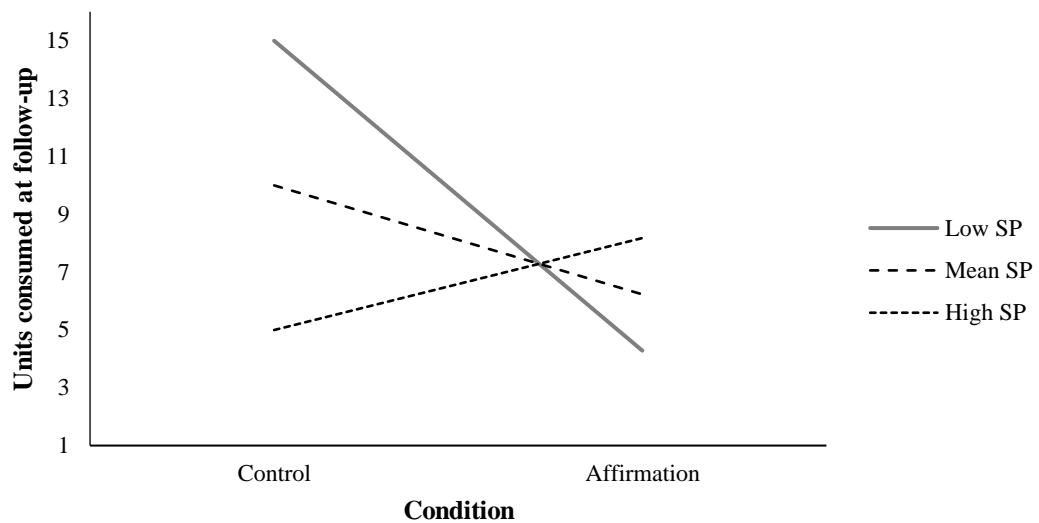
Figure 2. Units of alcohol consumed at follow-up regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

affirmed (versus control). However, a different pattern held for units of alcohol consumed at follow-up. Here, self-affirmed participants low in systematic processing reported consuming less units of alcohol at follow-up than control participants.

Study 2

Study 2 aimed to replicate and build on the findings of Study 1. This study used the same design as Study 1, but additionally explored the impact of self-affirmation on narrative engagement. Narrative engagement – the process of being "transported into a narrative world" (Green & Brock, 2000, p. 701) – is a key mechanism through which narratives are thought to be persuasive (e.g., de Graaf, Hoeken, Sanders, & Beentjes, 2012; Hinyard & Kreuter, 2007). Such engagement is influenced by how much attention is paid to the narrative, how much people can imagine the consequences of the narrative story, and the recipient's ability to vividly imagine the scenario (e.g., Bollinger & Kreuter, 2012; Kreuter et al., 2010; Mazor et al., 2007; McQueen et al., 2011; Murphy et al., 2013). To date, however, no study has investigated whether a self-affirmation

manipulation influences the impact of narratives on engagement. Investigation of this is important to assess whether self-affirmation operates through the mechanisms postulated to underlie the impact of narrative information on responses. Narrative engagement was assessed in the current study using indices of visualisation, narrative emotion, narrative attention, and perspective taking, to capture cognitive and affective elements of engagement.

Accordingly, the first aim of Study 2 was to explore the effect of self-affirmation presented in combination with narrative health information on open-minded responding to the information, cognitions indicative of motivation to change behaviour, narrative engagement, and, ultimately, alcohol consumption. In line with the results of Study 1, it was tentatively hypothesised that self-affirmation would result in more open-minded responding to the narrative information. No specific directional hypotheses were made regarding the impact of self-affirmation on cognitions indicative of motivation to change behaviour or measures of narrative engagement. The second aim of Study 2 was to further explore whether systematic processing might moderate the effectiveness of a self-affirmation manipulation. In line with the results of Study 1, it was hypothesised that individuals low in systematic processing would show (i) less open-minded responding, (ii) less positive cognitions indicative of motivation to change behaviour, but (iii) a greater reduction in alcohol consumption at follow-up. Moreover, the current study tested whether these effects extended to narrative engagement.

Method

Design and Procedure

This study used a one-way between-subjects experimental design, with self-affirmation condition (self-affirmation vs. control) as the independent variable. Participants completed the Baseline and Time 1 measures, and experimental

manipulations, in the same order as in Study 1; the follow-up questionnaire was sent to participants after 7 days. Undergraduate students were recruited using the School of Psychology's participant database and were compensated with course credits. As in Study 1, all parts of the study were completed online. At Time 1, participants were randomly allocated to the affirmation ($n = 36$), or control ($n = 31$) condition by the host website, Survey Gizmo.

Participants

Sixty-eight female participants who met the inclusion criteria (i.e., they described their ethnicity as 'White') and who had completed the baseline questionnaire responded to the Time 1 questionnaire 24 hours later. One participant was removed (in the control condition, $n = 1$) as they had failed to provide a value in the self-affirmation manipulation (see *Materials* section), suggesting that they had not completed the task. Accordingly, the final sample consisted of 67 participants. The mean age of the sample was 18.82 years ($SD = 1.92$; range = 18-33) and all of the participants were students. Sixty-six participants responded to the follow-up questionnaire, resulting in an overall attrition of 1.02%.

Materials

Participants completed an online questionnaire at three time points (baseline; Time 1; follow-up). The first page of each questionnaire contained instructions about consent and ethics and, unless stated otherwise, materials were presented in the order described below. All items were measured on 7-point scales ranging from *strongly disagree* [1] to *strongly agree* [7], unless otherwise indicated. A mean score was calculated for each participant on each scale, with higher scores indicating greater levels of the construct in question.

Baseline questionnaire

The Baseline questionnaire was identical to that used in Study 1. It included demographic measures of gender, age, ethnicity and employment status as well as measures of systematic processing and baseline attitudes towards alcohol consumption. People's tendency to systematically process information was assessed with the systematic processing measure from Griffin et al. (2002) as detailed in Study 1, α = .73. Baseline attitude towards alcohol consumption was assessed using the same items as detailed in Study 1, $r(67) = .48$, $p < .001$.

Time 1 questionnaire.

Time 1 alcohol intake. Alcohol consumption over the previous 7-days was measured using an adapted version of the timeline fallback technique (Armitage et al., 2011; Sobell & Sobell, 1992) as described in Study 1.

Self-affirmation. The self-affirmation and control tasks used in this study were the same as those used in Study 1. Participants also completed measures assessing value importance and retrospective-manipulation checks as described in Study 1.

Health information. The narrative health information was identical to that used in Study 1.

Dependent variables.

Open-minded responding to health information. Participants were asked to complete the same measures of message acceptance, $r(66) = .82$, $p < .001$, personal relevance, $r(66) = .56$, $p < .001$, message derogation, $r(66) = .57$, $p < .001$, counter-arguing, α = .84, negative affect, α = .87, and risk, α = .90, as in Study 1.

Cognitions indicative of motivation to change behaviour. Participants completed the same measures of intention, $r(66) = .97$, $p < .001$, identity, α = .85,

attitude, $r(66) = .94$, $p < .001$, and anticipated regret, $r(66) = .97$, $p < .001$, as used in Study 1.

Narrative engagement. Participants completed a further set of dependent variables designed to assess four aspects of engagement with the narrative information, as follows:

Visualisation. Visualisation was measured with two items (adapted from Harris & Napper, 2005, emphases in original): "How easy is it for you to IMAGINE yourself developing breast cancer if you continue with your current level of alcohol consumption?" and "How easy is it for you to VISUALISE yourself developing breast cancer if you continue with your current level of alcohol consumption?" (*Not easy at all* [1] to *very easy* [7]), $r(66) = .79$, $p < .001$.

Narrative emotion. Narrative emotion was measured using three items (Green & Brock, 2000), "The information affected me emotionally", "I found the information moving" and "While I was reading, the information touched my emotions", $\alpha = .91$.

Narrative attention. Narrative attention was measured with three items (Green & Brock, 2000) from the stem "While I was reading the information": "I forgot about the world around me", "My attention was fully captured by it", and "I was fully concentrated on the information", $\alpha = .88$.

Perspective taking. Perspective taking was measured using three items (Cohen, 2001) adapted from the stem "While I was reading": "I imagined what it would be like to be in Sam's position", "I put myself in Sam's position" and "I pictured what it would be like for Sam to experience having breast cancer", $\alpha = .85$.

History of breast cancer. Participants completed the same measure of prior history of breast cancer as detailed in Study 1.

Follow-up questionnaire.

The follow-up questionnaire was identical to that used in Study 1, and included a measure of alcohol intake at follow-up. All participants completed the same funnel debrief as used in Study 1.

Results

The mean number of units of alcohol participants reported consuming in a typical 7-day period before the manipulations was 17.62 (SD = 14.34; Range = 0 – 67.50). Means and standard deviations for all baseline measures by condition are shown in Table 7 and correlations between dependent variables are reported in Appendix A.

Table 7

Means (and SDs) for all Baseline Measures by Condition in Study 2

	Self-affirmation	Control
Systematic processing	3.07 (0.57)	3.36 (0.68)
Baseline attitude towards alcohol	4.82 (0.83)	4.85 (1.04)
Age (years)	19.06 (2.52)	18.55 (0.72)
Time 1 alcohol intake (units last 7-days)	14.45 (13.59)	22.81 (16.93)

Preliminary Analyses

Tests of differential attrition between Time 1 and follow-up were not conducted owing to low attrition (n = 1 drop-out).

Preliminary analyses were conducted to explore whether there were any differences between conditions on baseline variables. A series of chi-square analyses revealed no association between condition and family history of breast cancer, $\chi^2(1, N = 67) = 1.47$, $p = .226$, or friend's history of breast cancer, $\chi^2(1, N = 67) = 0.05$, $p = .816$. It was not possible to test whether there was an association between condition and history of breast cancer for the participant as none indicated they had any personal

history of breast cancer. Furthermore, one-way ANOVAs (control, self-affirmation) revealed no significant differences between the conditions for age, $F(1, 65) = 1.16$, $p = .285$, $\eta_p^2 = .018$, or baseline attitude, $F(1, 65) = 0.02$, $p = .878$, $\eta_p^2 = .000$. There was, however, a significant difference in Time 1 alcohol consumption between the conditions, with those in the control condition consuming significantly more alcohol at Time 1 than those in the self-affirmation condition, $F(1, 65) = 4.91$, $p = .030$, $\eta_p^2 = .070$. Controlling for Time 1 alcohol consumption in the analysis did not alter the pattern of results; therefore, for clarity, results are reported without controlling for this variable.

As expected, there was a significant effect of condition on the importance of the value selected: participants in the self-affirmation condition chose to write about a more important value ($M = 6.18$, $SD = 1.28$) than those in the control condition ($M = 2.68$, $SD = 1.20$), $F(1, 132) = 264.27$, $p < .001$, $\eta_p^2 = .67$. The effect of self-affirmation condition on the retrospective identity and values self-affirmation manipulation check items was significant: Participants in the self-affirmation condition ($M = 4.92$, $SD = 1.14$) reported reflecting on identity and values more during the task than those in the control condition ($M = 4.52$, $SD = 1.21$), $F(1, 132) = 3.88$, $p = .05$, $\eta_p^2 = .03$. However, participants in the self-affirmation ($M = 4.52$, $SD = 1.33$) and control conditions ($M = 4.31$, $SD = 1.29$) did not differ significantly in their reported reflection on attributes, $F(1, 132) = 0.90$, $p = .342$, $\eta_p^2 = .01$.

Main Analyses

Mean scores on all of the dependent variables by condition are given in Table 8.

Effects of self-affirmation and systematic processing on indices of open-minded responding to health information and cognitions indicative of motivation to change behaviour. A series of hierarchical regression analyses identical to those conducted in Study 1 explored whether (i) self-affirmation would have a main effect on

each measure of open-minded responding to the health risk information and cognitions indicative of motivation to change behaviour and (ii) systematic processing would moderate the impact of self-affirmation on these outcomes. Resultant analyses are reported in Tables 9 - 11. Analyses are only reported in the text below if they revealed either a significant main effect of self-affirmation, or significant interaction between self-affirmation and systematic processing.

Main effect of self-affirmation. Analyses revealed a main effect of self-affirmation (entered at step 1) on counter-arguing (ß = -.28, *p* = .024), intentions (ß = -.33, *p* = .006), identity (ß = -.30, *p* = .015) and attitude (ß = -.25, *p* = .044). Participants in the self-affirmation condition engaged in less counter-arguing, but reporter weaker perceptions of identity regarding reducing their alcohol consumption, as well as lower intentions to, and less positive attitudes towards, reducing the amount of alcohol consumed over the next 7 days.

Moderation by systematic processing.

Personal relevance. Systematic processing moderated the impact of self-affirmation on personal relevance, as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model, ΔF (1, 63) = 6.35, *p* = .014, ΔR^2 = .09. Simple slopes revealed that there was a significant effect of self-affirmation on personal relevance when systematic processing was low, β = -.47, *t*(66) = -2.67, *p* = .010 (Figure 3), such that individuals in the self-affirmation condition reported lower personal relevance compared to those in the control condition. There was no impact of the self-affirmation manipulation for those with mean, β = -.15, *t*(66) = -1.25, *p* = .217, or high levels of systematic processing, β = .15, *t*(66) = 0.89, *p* = .375.

Table 8

Means (and SDs) for all Dependent Measures by Condition in Study 2

	Self-affirmation	Control
Time 1 questionnaire		
Indices of open-minded responding to health information		
Message acceptance	4.69 (1.12)	4.47 (1.42)
Personal relevance	4.50 (1.42)	4.98 (1.38)
Message derogation	3.78 (1.09)	3.84 (1.20)
Counter-arguing	3.21 (1.49)	4.00 (1.25)
Negative affect	3.26 (1.26)	3.70 (1.49)
Risk	2.72 (1.11)	3.10 (1.15)
Cognitions indicative of motivation to change behaviour		
Intention	3.04 (1.68)	4.29 (1.94)
Identity	2.79 (1.33)	3.65 (1.48)
Attitude	3.72 (0.94)	4.15 (0.72)
Anticipated regret	2.53 (1.38)	3.00 (1.53)
Indices of narrative engagement		
Visualisation	2.43 (1.35)	2.63 (1.22)
Narrative emotion	3.33 (1.66)	3.36 (1.34)
Narrative attention	3.40 (1.58)	3.33 (1.27)
Perspective taking	4.06 (1.57)	4.31 (1.03)
Follow-up questionnaire		
Alcohol intake at follow-up (units last 7-days)	13.86 (12.99)	16.96 (12.13)
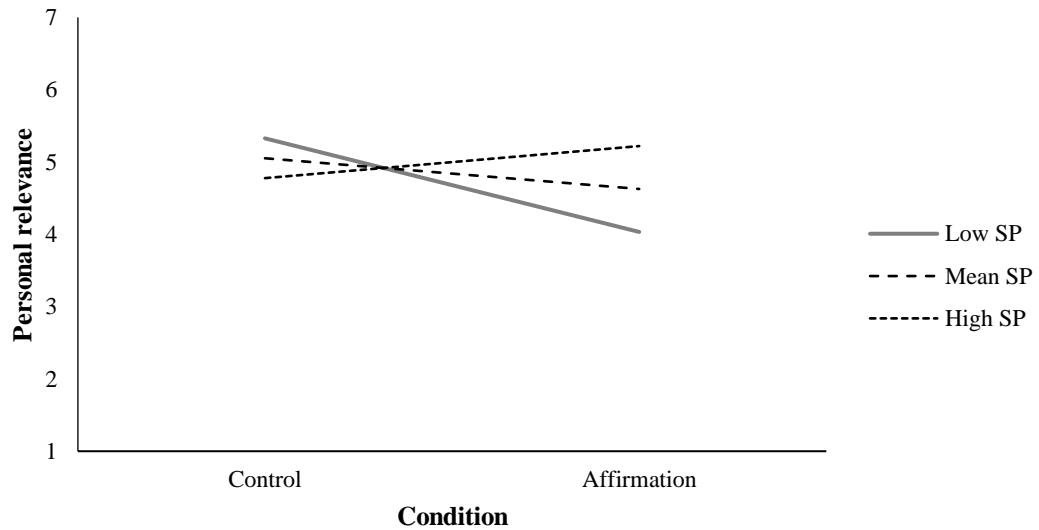
Figure 3. Personal relevance regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

Negative affect. Systematic processing moderated the impact of self-affirmation on negative affect, as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model, $\Delta F(1, 63) = 5.68$, $p = .02$, $\Delta R^2 = .08$. Simple slopes analysis revealed that there was a significant effect of self-affirmation on negative affect when systematic processing was low, $\beta = -.44$, $t(66) = -2.54$, $p = .014$ (Figure 4), such that individuals in the self-affirmation condition reported lower negative affect compared to those in the control condition. There was no impact of the self-affirmation manipulation on negative affect for those with mean, $\beta = -.15$, $t(66) = -1.20$, $p = .235$, or high levels of systematic processing, $\beta = .15$, $t(66) = 0.83$, $p = .408$.

Table 9

Summary of Hierarchical Multiple Regression Analyses Predicting Indicators of Open-Minded Responding (Part 1) in Study 2

Variables entered	Message acceptance			Personal relevance			Message derogation			Counter-arguing		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.09	.09	.09	-.17	-.15	-.15	-.03	.00	.00	-.28*	-.26*	-.26*
Systematic processing		-.00	.03			-.20		.13	.10		.08	.01
Condition X Systematic processing			-.04			.41*			.05			.11
R^2	.008	.008	.009	.030	.036	.124	.001	.016	.017	.076	.082	.088
Model F	0.53	0.26	0.19	1.97	1.19	2.98*	0.05	0.52	0.36	5.38*	2.88†	2.04
ΔR^2		.000	.001		.006	.088		.015	.001		.006	.006
ΔF		0.00	0.06		0.42	6.35*		0.99	0.07		0.42	0.41

†$p < .10$, *$p < .05$

Table 10

Summary of Hierarchical Multiple Regression Analyses Predicting Indicators of Open-Minded Responding (Part 2) in Study 2

Variables entered	Negative affect			Risk		
	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	-.16	-.15	-.15	-.17	-.16	-.17
Systematic processing		.05	-.22		.03	-.18
Condition X Systematic processing			.39*			.30†
R^2	.025	.027	.108	.030	.031	.079
Model *F*	1.68	0.89	2.53†	2.01	1.02	1.80
ΔR^2		.002	.080		.001	.048
ΔF		0.13	5.68*		0.05	3.29†

$^\dagger p < .10$, $^* p < .05$

Table 11

Summary of Hierarchical Multiple Regression Analyses Predicting Cognitions Indicative of Motivation to Change Behaviour in Study 2

Variables entered	Intention			Identity			Attitude			Anticipated regret		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	-.33**	-.35**	-.35**	-.30*	-.27*	.27*	-.25*	-.24†	-.24†	-.16	-.15	-.15
Systematic processing		-.09	-.19		.12	.02		-.02	-.08		.04	.00
Condition X Systematic processing			-.15			.15			.15			.06
R^2	.109	.116	.129	.088	.101	.113	.061	.061	.072	.026	.028	.029
Model F	7.98**	4.21*	3.11*	6.24*	3.61*	2.67†	4.23*	2.09	1.64	1.76	0.91	0.63
ΔR^2		.007	.013		.014	.011		.000	.011		.001	.002
ΔF		0.51	0.91		0.98	0.82		0.01	0.75		0.08	0.11

$^\dagger p < .10, *p <. 05, **p <. 01$
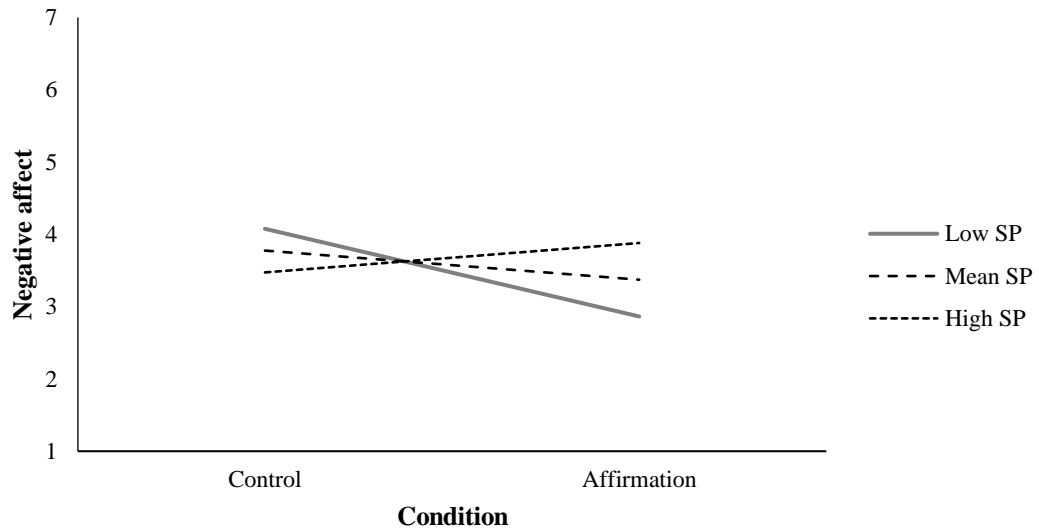
Figure 4. Negative affect regressed onto condition for individuals with low, mean and high levels of systematic processing (SP*).*

Effects of self-affirmation and systematic processing on measures of narrative engagement. A series of hierarchical regression analyses identical to those conducted in Study 1 tested (i) the hypotheses that self-affirmation would have a main effect on each measure of narrative engagement and (ii) whether systematic processing moderated the impact of self-affirmation on these outcomes. Resultant analyses are reported in Table 12. Analyses are only reported in the text below if they revealed either a significant main effect of self-affirmation, or significant interaction of self-affirmation and systematic processing.

Main effect of self-affirmation. Analyses revealed no main effect of self-affirmation on any measure of narrative engagement (entered at step 1).

Moderation by systematic processing.

Narrative attention. Systematic processing moderated the impact of self-affirmation on attention as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model, $\Delta F (1, 63) = 6.27, p = .015, \Delta R^2 = .01$. There was no impact of self-affirmation manipulation on

attention for those with mean levels of systematic processing, $\beta = .01$, $t(66) = 0.04$, $p = .967$ (Figure 5); however, for those with high, $\beta = .31$, $t(66) = 1.79$, $p = .078$, and low levels of systematic processing, $\beta = -.30$, $t(66) = 1.74$, $p = .086$, there was a marginal impact of self-affirmation. Relative to controls, self-affirmation increased attention for participants high in systematic processing, whereas self-affirmation reduced attention for those low in systematic processing.
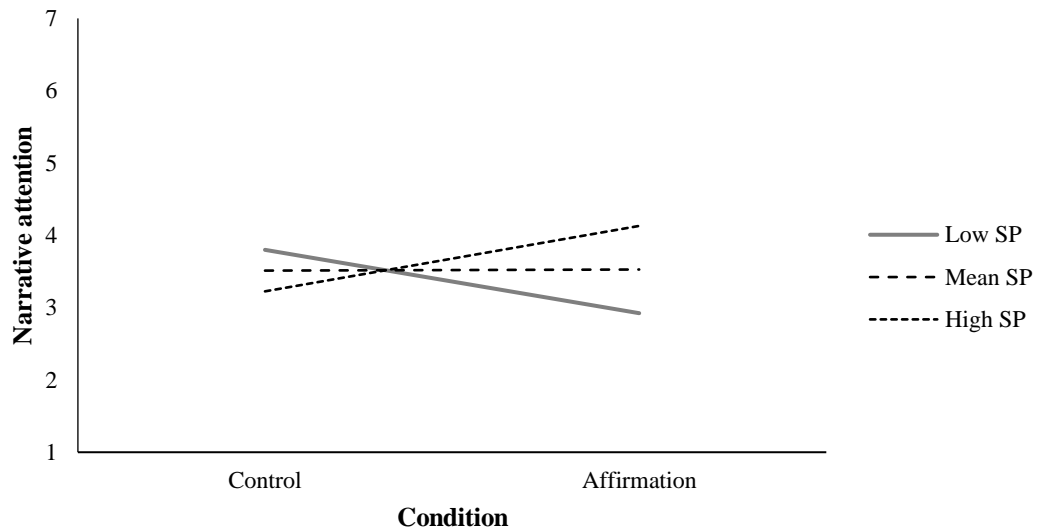
Figure 5. Narrative attention regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

Perspective taking. Systematic processing moderated the impact of self-affirmation on perspective taking, as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model, $\Delta F(1, 63) = 5.48$, $p = .022$, $\Delta R^2 = .074$. Simple slopes analyses revealed a marginal effect of self-affirmation on perspective taking for those with low levels of systematic processing, $\beta = -.31$, $t(66) = -1.83$, $p = .072$ (Figure 6), such that participants in the self-affirmation condition reported lower levels of perspective taking than those in the control condition. There was no impact of self-affirmation for those with mean,

Table 12

Summary of Hierarchical Multiple Regression Analyses Predicting Indicators of Narrative Engagement in Study 2

Variables entered	Narrative emotion			Narrative attention			Narrative Perspective-taking		
	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.03	.00	.10	-.02	.00	.01	-.09	-.03	-.03
Systematic processing		-.10	-.17		.08	-.20		.27*	.13
Condition X Systematic processing			.10			.41*			.37*
R^2	.001	.011	.017	.000	.006	.096	.008	.075	.149
Model F	0.05	0.35	0.36	0.14	0.20	2.23†	0.56	2.61†	3.69*
ΔR^2		.010	.006		.006	.090		.067	.074
ΔF		0.66	0.37		0.38	6.27*		4.63*	5.48*

†$p < .10$, *$p < .05$
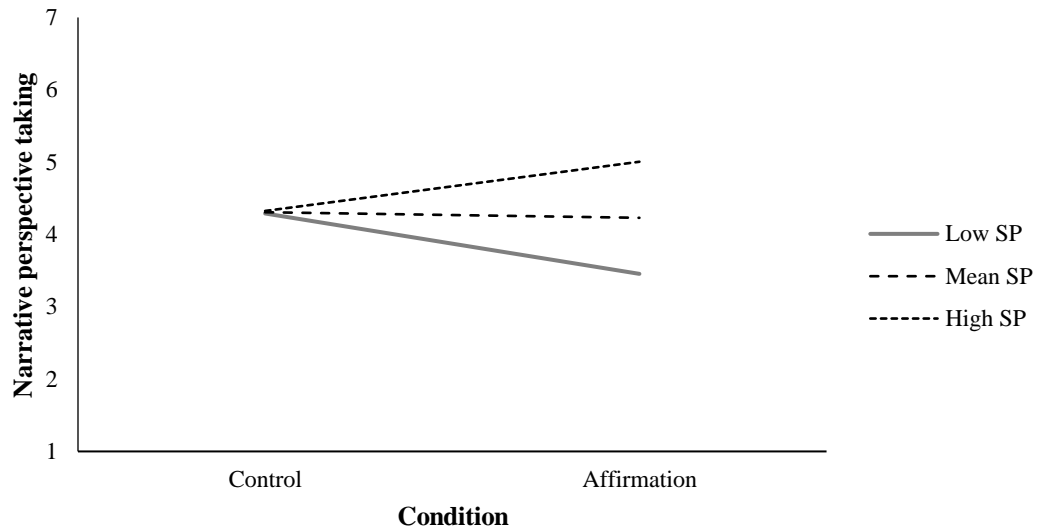
Figure 6. Perspective taking regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

$\beta = -.03$, $t(66) = -0.24$, $p = .810$, or high levels of systematic processing, $\beta = .25$, $t(66) = 1.48$, $p = .145$.

Effects of self-affirmation and systematic processing on measure of alcohol consumption at follow-up. Hierarchical multiple regression analyses identical to those conducted in Study 1 tested the effect of the self-affirmation manipulation, systematic processing and the interaction between condition and systematic processing on alcohol consumption at follow-up. As can be seen in Table 13, time 1 alcohol consumption (entered at step 1) significantly contributed to the prediction of participants' alcohol consumption at follow-up, $F(1, 64) = 85.88$, $p < .001$, $R^2 = .057$. However, the inclusion of condition (step 2), systematic processing (step 3), and the two-way interaction term (step 4), did not significantly increase the amount of variance explained by the model, (ΔR^2s $< .01$, ps $> .21$).

Table 13

Summary of Hierarchical Multiple Regression Analyses Predicting Alcohol

Consumption at Follow-up (Units) in Study 2

Variables entered	Alcohol consumption at follow-up			
	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 4
Time 1 alcohol intake	.76***	.78***	.75***	.75***
Condition		.10	.06	.06
Systematic processing			-.11	-.12
Condition X Systematic processing				.01
R^2	.573	.582	.592	.593
Model F	85.88***	43.81***	30.05***	22.18***
ΔR^2		.009	.011	.000
ΔF		1.32	1.64	0.01

$^{\dagger}p < .10, *p <. 05, **p < .01, ***p < .001$

Discussion

This study provided some support for the hypothesis that self-affirmation would promote greater levels of open-minded responding when used in combination with narrative health information. Consistent with Study 1, individuals in the self-affirmation condition reported less counter-arguing than those in the control condition. Interestingly, however, in the present study the self-affirmation manipulation also decreased cognitions indicative of motivation to change behaviour as reflected in lower intentions, less positive attitudes and a weaker identity concerning reducing alcohol consumption.

There was also some further support for the hypothesis that systematic processing would moderate the impact of self-affirmation on outcomes. In particular, findings indicated that people low in systematic processing reported lower levels of personal relevance of the narrative and negative affect when self-affirmed (versus control). There was also evidence that systematic processing moderated the effect of self-affirmation on elements of narrative engagement. Here, the pattern of findings indicated that, relative to controls, self-affirming individuals low in systematic processing reduced narrative attention and perspective taking, whereas self-affirming individuals high in systematic processing increased narrative attention. There was no significant effect (main or moderated) of self-affirmation on behaviour at follow-up.

General Discussion

The current research had two aims. The first was to investigate the effects of self-affirmation in combination with narrative health information on open-minded responding to the health message, cognitions indicative of motivation to change behaviour, engagement with the narrative (Study 2) and behaviour change at follow-up.

The findings of both studies provide some limited evidence that self-affirmation increased open-minded responding to health information presented in a narrative format. Specifically, the research findings demonstrated that self-affirmed individuals reported lower levels of counter-arguing (Study 1 and 2) and message derogation (Study 1) compared to their non-affirmed counterparts. This is broadly consistent with the positive effects of self-affirmation observed in Sherman et al. (2000, Study 2), who found that the combination of self-affirmation and narrative health information promoted open-mindedness to the message and reflected in reported perceptions of HIV risk.

However, there was also some evidence that self-affirmation resulted in reduced cognitions indicative of motivation to change behaviour. Thus, the findings of Study 2 demonstrated that self-affirmed participants reported weaker intentions, less positive attitudes and lower perceptions of identity regarding reducing alcohol consumption compared to their non-affirmed counterparts. Critically, therefore, the self-affirmation manipulation appeared to exert different effects across different sets of dependent variables in response to narrative information.

Consequently, given the promise of utilising self-affirmation to increase openness to traditional formats of health information (e.g., Armitage et al., 2011; Harris & Napper, 2005; Jessop et al., 2009), future research should continue to explore the impact of self-affirmation on responses to information presented in a narrative format. In particular, attention should be paid to the potential for self-affirmation to exert different effects of different sets of outcome variables.

There was no evidence from either study that self-affirmation had any main effects on either narrative engagement (albeit this was only measured in Study 2) or alcohol consumption at follow-up. Indeed, the absence of a main effect of self-affirmation on behaviour change is perhaps not surprising given that it did not exert a positive impact on cognitions thought to act as precursors to behaviour change, including behavioural intention. Nonetheless, it is noteworthy that previous self-affirmation research has demonstrated positive effects of self-affirmation on reducing alcohol consumption at follow-up when used in combination with statistical health information (Armitage et al., 2011; Scott, Brown, Phair, Westland, & Schüz, 2013).

The second aim of the present research was to explore whether systematic processing might moderate any effects of self-affirmation on outcomes. The findings from both studies provided some support for this prediction. Specifically, systematic

processing appeared to moderate the impact of self-affirmation on indicators of open-minded responding to the narrative such that in individuals with low levels of systematic processing reported lower risk perceptions in relation to developing breast cancer (Study 1), lower reported personal relevance and lower levels of negative affect about the narrative (Study 2), compared to their non-affirmed counterparts. In contrast, there was no significant effect of self-affirmation on any of these outcomes for those with systematic processing at mean or high levels.

There was also some evidence from Study 2 that systematic processing also moderated the impact of self-affirmation on indicators of engagement with the narrative, specifically, self-affirmed participants low in systematic processing showed a trend towards reporting lower attention to the narrative and perspective taking, as well as trend towards greater attention for self-affirmed high systematic processors. There was no evidence from either study that the effects of self-affirmation on cognitions indicative of motivations to change behaviour were moderated by systematic processing. Importantly, therefore, current research findings support and extend previous research showing that self-affirmation does not have general effects across people (e.g., Düring & Jessop, 2015; Emanuel et al., 2016).

One possible explanation as to why self-affirmation might have more apparent effects for individuals with low systematic processing could relate to the availability of self-resources (Sherman & Cohen, 2006). Arguably, the goal of self-affirming is to provide an individual with the opportunity to reflect on positive self-resources (Cohen & Sherman, 2014), so it is possible that individuals with fewer resources available (e.g., those with lower systematic processing) may benefit more from the enhanced perception of self-resources that self-affirmation affords compared to individuals with greater self-resources (Sherman & Cohen, 2006). This boost in perceived self-resources

may then, in turn, result in greater critical scrutiny of the narrative (cf. Correll et al., 2004). In comparison, individuals higher in systematic processing – who already show tendencies to process information more systematically – may not require an external manipulation to boost their self-resources, which may explain why there were no significant observed effects of self-affirmation in this group.

Furthermore, findings of Study 1 suggested that systematic processing moderated the effect of self-affirmation on behaviour at follow-up. In contrast with the findings for indices of open-minded responding and narrative engagement reported above, and counter-intuitively therefore, there was evidence that self-affirmed low systematic processors consumed less alcohol at follow-up compared to their non-affirmed counterparts. In contrast, there was no effect of self-affirmation on alcohol consumption at follow-up for individuals with mean or high levels of systematic processing. As far as the author is aware, this is the first study to demonstrate a moderating impact of systematic processing on the effect of self-affirmation on behaviour.

It is unclear, however, why self-affirmed individuals low in systematic processing initially rejected the message but then reduced their alcohol intake at follow-up. One possible explanation is that, for these individuals, self-affirmation may have had a direct impact on behaviour by boosting self-control and working memory (e.g., Logel & Cohen, 2012). Indeed, Epton et al. (2015) reported that the impact of self-affirmation on behaviour was greater than on message acceptance and intentions in their meta-analysis. However, as this explanation was not empirically tested in the current study, future research would benefit from exploring the non-conscious or reflective processes that self-affirmation manipulations may elicit.

When interpreting the current findings, it is important to acknowledge several limitations. First, to maximise the personal relevance of the narrative health information, the current research relied on White female participants, influencing the generalisability of the findings. Given that narrative health information may be particularly effective for people from non-white backgrounds (e.g., McQueen, Kreuter, Kalesan, & Alcaraz, 2011), it is important to test whether the observed effects of self-affirmation with narrative information hold in a more diverse sample. Second, the narrative used in this study was based on a real narrative, but, for the purpose of embedding it into the leaflet, was adapted. Thus, participants may have sensed that the narrative was not genuine and therefore have been less persuaded by it. Future research should explore the effects of self-affirmation on a real narrative. Third, the current studies relied of self-report measures of alcohol consumption. While evidence supports the validity of self-report measures of alcohol intake (Babor, Steinberg, Anton, & Del Boca, 2000; Del Boca & Noll, 2000), future research would benefit from replicating the current research using an objective measure of behaviour. Fourth, both studies were underpowered and may, therefore, be unlikely to detect effects reliably. Fifth, a limitation of Study 2 is randomisation did not equalise the two conditions at baseline in respect to Time 1 alcohol consumption.

Overall, the present research revealed some positive effects of self-affirmation in increasing open-minded responding to narrative information, but there was also some evidence that self-affirmation reduced motivation to change behaviour. Furthermore, this paper presents the first test of systematic processing as a moderator of self-affirmation effects, providing some evidence that individuals low in systematic processing show less open-minded responding to the narrative health information when self-affirmed. Collectively, these findings further emphasise the importance of

exploring the impact of self-affirmation on information presented in a narrative format

as well as considering individual differences in systematic processing when choosing

information presentation formats.

CHAPTER 3: Experimentally Manipulated Self-Affirmation Promotes Reduced Alcohol Consumption in Response to Narrative Information

Abstract

Background Health risk information is increasingly being conveyed through accounts of personal experiences or *narrative* information. However, whether self-affirmation can enhance the ability of such messages to promote behaviour change has yet to be established.

Purpose To test whether self-affirmation (a) promotes behaviour change following exposure to narrative information about the risks of excessive alcohol consumption and (b) boosts message acceptance by increasing narrative engagement.

Methods In an experimental design, female drinkers ($N = 142$) reported their baseline alcohol consumption and were randomly allocated to condition (Self-Affirmation, Control). All participants next watched an extract of a genuine narrative piece in which the central character discussed her liver disease and its link with her previous alcohol consumption. Then, participants completed measures assessing engagement with the narrative and message acceptance. The primary outcome was alcohol consumption, assessed at 7-day follow-up.

Results Self-affirmed participants reported consuming significantly less alcohol at follow-up compared to baseline (mean 7-day decrease = 5.43 units); there was no change in alcohol consumption for the control group. Immediately post-manipulation, self-affirmed participants (vs. control) showed more message acceptance and reported greater engagement with the information. The impact of self-affirmation on message acceptance was mediated by narrative engagement.

Conclusions Self-affirmation can promote behaviour change following exposure to health information, even when presented in narrative form.

Introduction

It has been estimated that improving six health behaviours could prevent more than 37 million premature deaths worldwide over the next 15 years (Kontis et al., 2014). However, encouraging people to adopt healthier lifestyles is beset with many challenges, not least defensive message resistance in the target audience. Such resistance can be a significant early barrier to commencing the change process (e.g., Keller, 1999), so finding and developing techniques to reduce resistance is a priority, as few are available (Rothman & Salovey, 2007).

Self-affirmation – e.g., by reflecting on important personal values or attributes – has been found to be effective in reducing resistance to information encouraging change in a variety of health behaviours. A recent meta-analysis by Epton, Harris, Kane, van Koningsbruggen, and Sheeran (2015) found reliable effects of self-affirmation on subsequent health behaviour ($d_+ = .32$), message acceptance ($d_+ = .17$) and intentions ($d_+ = .14$): These effect sizes are comparable in magnitude to those obtained for other health-behaviour change interventions (e.g., Johnson, Scott-Sheldon, & Carey, 2010).

To date, however, studies of self-affirmation have employed a limited range of health-risk materials, focusing primarily on information that is text-based, static, impersonal, and that often conveys numerical risk. Such *statistical* health information remains an important vehicle for health communication, but contrasts with the experiential accounts, in which information is presented dynamically and visually, that are now widely available and easily accessible to those searching for health information (Ziebland & Wyke, 2012). Such *narrative* health information presents "concrete, emotionally interesting information, such as a first-person account of someone who came to experience a particular condition" (de Wit, Das, & Vet, 2008, p. 110). Like self-affirmation, narrative information is hypothesised to reduce resistance to persuasion

and has been shown to increase perceptions of risk, elicit stronger affective responses and more positive cognitions, and promote behaviour change (e.g., de Wit et al., 2008; McQueen, Kreuter, Kalesan, & Alcaraz, 2011).

Importantly, it is not clear whether self-affirmation will enhance responding to narrative information. Self-affirmation acts to offset the psychological threat embodied in a message that implies one's current behaviour is sub-optimal morally and adaptively (Sherman & Cohen, 2006). To the degree that narrative information conveys such a threat and evokes defensiveness, we would expect self-affirmation to increase openness to it. However, if narratives evoke less defensiveness, there will be less defensive resistance for self-affirmation to ameliorate and perhaps little added benefit to accrue from self-affirming. Moreover, narrative information is typically case-based and thus may be perceived as relatively weak and unpersuasive when exposed to critical scrutiny through any systematic mind-set induced by self-affirmation (e.g., Correll, Spencer, & Zanna, 2004).

The question arises, therefore, whether self-affirmation can be used in conjunction with narrative information to boost its impact. However, the little evidence that is available is mixed and has not explored effects on behaviour at follow-up (Kim & Niederdeppe, 2016; Sherman, Nelson, & Steele, 2000). Given the growing interest in developing self-affirmation as an intervention, it is important to establish whether it can be used effectively with various types of information and, in particular, whether self-affirmation can promote behaviour change in conjunction with such information. We therefore tested whether self-affirmation could increase acceptance of narrative information and encourage behaviour change. We did this in the context of alcohol consumption, as promoting responsible drinking is a health priority (e.g., Rehm et al., 2009). Worldwide, alcohol consumption is the leading risk factor for premature death

and disability among people aged between 15 and 49 (Lim et al., 2012). Alcohol consumption is linked to over 40 medical conditions, including cancer, stroke, hypertension, liver disease and heart disease (Office of National Statistics, 2013). This, together with research showing that alcohol-related liver disease in young adults has increased in recent years (Smith et al., 2006), makes it an important behaviour to target.

Method

The experiment (registered with ClinicalTrials.gov, Identifier NCT02681900) had a between-subjects design. Participants completed a self-affirmation manipulation or control task before watching an extract from a genuine narrative piece in which the central character (Jo) discussed her liver disease and its links with her previous alcohol consumption. Seven days later we assessed the primary outcome, subsequent alcohol consumption[4]. To establish whether the manipulation influenced the processes by which narrative information has been hypothesized to work, we also measured narrative engagement (the process of being "transported into a narrative world", Green & Brock, 2000, p. 701) and message acceptance. To maximize personal relevance, we tested female respondents, who were the same sex as Jo.

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[4] When registering interest in the study, participants were asked to complete a separate baseline questionnaire, which assessed whether or not they were consumers of alcohol. This questionnaire also included the measure of systematic processing used in other studies in this thesis, plus several other individual difference variables that do not form the focus of the current chapter. Analyses revealed no evidence that systematic processing moderated the impact of self-affirmation on any outcome variable in the current study. These findings are reported in full in Appendix B.

Participants were recruited through the School of Psychology's participant database and compensated with course credits. Materials and measures were administered via Survey Gizmo, both in the laboratory (baseline) and subsequently online (follow-up). After seven days, participants were emailed a weblink to the follow-up questionnaire. The designated committee of the host University gave ethics approval.

Participants

One hundred and forty two women, who met the inclusion criterion that they drank alcohol (M_{age} = 19.37 years, SD = 2.51, range = 18-44), completed the baseline questionnaire. All had English as their first language; most were White British (85.82%).

The majority (96.48%; N = 136) completed the follow-up questionnaire (see Figure 1), resulting in an attrition rate of 3.42%. Tests of differential attrition were not conducted, owing to the low number of non-responders at follow-up.
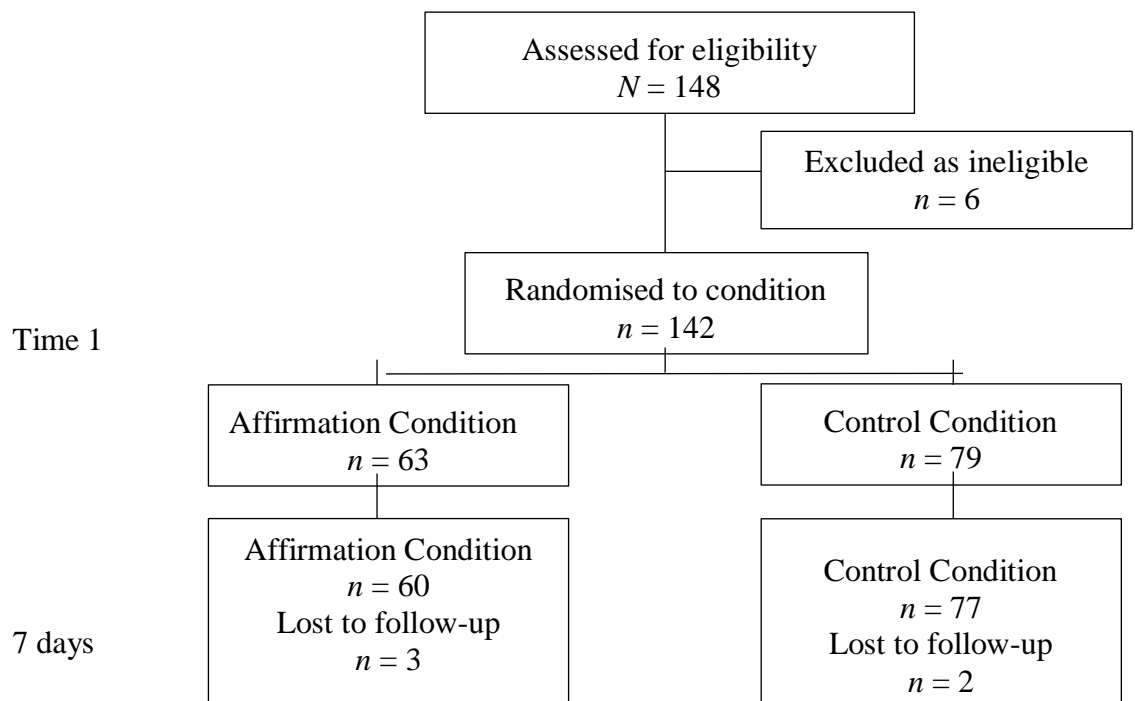
Figure 7. CONSORT diagram illustrating recruitment, enrolment, randomisation, and attrition.

Materials and Procedure

Page one of both questionnaires contained information regarding consent and ethics. (Full details of materials, measures and procedures can be found in Appendix B.) After giving informed consent, participants provided their age, nationality, ethnicity, and baseline alcohol consumption: Participants were asked to report the type of alcohol they had consumed (i.e., beer, wine, spirit), the type of container it was in (i.e., small glass, can, pint, single or double measure) and the number of each of these drinks they had consumed on each day in the past week (cf. Armitage, Harris, & Arden, 2011). The total number of UK units (1 unit = 10ml or 8g of pure alcohol) consumed by each participant was calculated using a UK NHS alcohol unit calculator. Next, participants were randomly allocated to condition using the randomization function on the host website, Survey Gizmo. Employing a method used widely in the literature (Epton et al., 2015), participants in the self-affirmation condition ($n = 63$) indicated their most important value, gave three examples why this value was important to them and one example of something they had done to demonstrate its importance; control participants ($n = 79$) indicated their least important value, gave three examples why that value could be important to someone else, and described something that person could do to show its importance. All participants rated how personally important the value was. Immediately following this exercise, participants viewed an extract from a TV documentary featuring Jo, who had liver disease that was attributed to her alcohol consumption (Faragher & Hindley, 2013). The extract was chosen to be of a length – approximately 3.5 minutes – typically encountered when exploring video content online. Immediately after viewing the extract, all participants stated correctly which disease Jo had. Participants then completed the dependent measures. *Message acceptance* was measured using a broad range of indices of positive responding to the message: ratings of personal relevance,

message credibility, message derogation, counter-arguing, negative affect arising from the message, perceived risk, attitudes towards reducing alcohol intake, anticipated regret, and intentions to reduce alcohol consumption (α = .74 - .98). *Narrative engagement* was measured using ratings of ease of visualization, narrative emotion, narrative attention and perspective taking (α = .81- .93). Finally, participants responded to a retrospective manipulation check comprising 5 items from Napper, Harris, and Epton (Napper, Harris, & Epton, 2009) (e.g., *"The task about values made me think about…" e.g., things I don't like about myself* [1] *to things I like about myself* [7]) and answered several questions about their history of liver disease. At follow-up, participants completed the same measure of alcohol consumption and a funnel debrief to establish whether they had correctly identified the purpose of the study. None had.

Analytic plan

Two-way ANOVA for mixed designs with condition as the between-subjects IV and time (baseline, follow-up) as within-subjects IV was used to test if condition affected the primary outcome, alcohol consumption. To test whether condition affected the secondary outcomes, message acceptance and narrative engagement, we ran separate one-way MANOVAs followed by univariate analyses of the component measures. The PROCESS macro for SPSS was used to test whether narrative engagement mediated the effect of self-affirmation on message acceptance, using the overall mean of the acceptance and engagement measures (reverse scored as appropriate, with higher scores indicating more acceptance and engagement)[5].

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[5] Analyses were also conducted to determine whether message acceptance mediated the impact of self-affirmation on behaviour. There was no evidence of mediation.

Results

There were no significant differences between conditions in baseline measures (all $ps > .15$), including baseline alcohol consumption ($M = 18.89$, $SD = 14.52$). Participants in the self-affirmation condition reported choosing a more important value ($M_{SA} = 6.33$, $SD_{SA} = 1.12$; $M_{control} = 2.79$, $SD_{control} = 1.47$) and had higher scores on the retrospective manipulation check than did those in the control condition ($M_{SA} = 5.19$, $SD_{SA} = 0.99$; $M_{control} = 4.46$, $SD_{control} = 0.97$), $ps < .001$.

Table 14

Means (and SDs) for Baseline Characteristics by Condition

	Self-affirmation condition	Control condition
Age (years)	19.27 (1.73)	19.44 (3.00)
% White British	83.87%	87.34%
Baseline alcohol consumption[a]	21.72 (14.72)	17.20 (14.22)

[a]Alcohol consumption measured in units per week.

There was a significant main effect of time, $F(1, 135) = 11.00$, $p = .001$, $\eta_p^2 = .08$, but not of condition, $F(1, 135) = 1.23$, $p = .269$, $\eta_p^2 = .01$, on alcohol consumption. Critically, however, the time X condition interaction was significant, $F(1, 135) = 3.88$, $p = .051$, $\eta_p^2 = .03$. Decomposing the interaction using separate within-subject ANOVAs indicated a significant decrease in consumption in the self-affirmation, $F(1, 59) = 13.24$, $p = .001$, $\eta_p^2 = .18$ ($M = 16.29$, $SD = 13.61$, M decrease = 5.43 units), but not the control, $F(1, 76) = 0.99$, $p = .32$, $\eta_p^2 = .01$ ($M = 15.82$, $SD = 14.81$, M decrease = 1.38 units), condition.

There were significant multivariate main effects of condition on message acceptance, $F(7, 134) = 3.10$, $p = .005$, $\eta_p^2 = .14$, and narrative engagement, $F(4, 137) = 2.51$, $p = .045$, $\eta_p^2 = .07$: self-affirmation promoted more of both. Univariate tests on the

Table 15

Effects of Self-Affirmation Condition on Reported Indicators of Message Acceptance and Engagement.

	Condition			
	Self-affirmation *M* (SD)	Control *M* (SD)	*F*	η_p^2
Acceptance				
Personal relevance	4.25 (1.51)	3.87 (1.57)	2.04	.01
Message acceptance	6.05 (0.78)	5.95 (0.68)	0.63	.00
Negative affect	4.34 (1.03)	3.78 (1.11)	9.60**	.06
Risk	2.76 (1.11)	2.46 (1.13)	2.60	.02
Attitudes	4.34 (0.80)	3.97 (.80)	7.44**	.05
Anticipated regret	2.98 (1.48)	2.49 (1.45)	4.03*	.03
Intention	4.05 (1.63)	4.08 (1.74)	0.02	.00
Engagement				
Ease of visualization	2.72 (1.17)	2.36 (1.10)	3.57*	.03
Narrative emotion	5.25 (1.25)	4.70 (1.50)	5.52*	.04
Narrative attention	5.71 (1.06)	5.68 (1.18)	0.02	.00
Perspective taking	5.44 (1.20)	5.40 (1.15)	0.05	.00

Note. *F* and η_p^2 refer to the univariate main effects of condition.

*p < .05, **p < .01, *** p < .001

individual acceptance and engagement measures indicated that those in the self-affirmation (vs control) condition reported significantly higher levels of negative affect,

anticipated regret, more positive attitudes, greater ease of visualization, and more emotion in response to the narrative (see Table 15).

In testing mediation, there was a significant indirect effect of self-affirmation on acceptance via engagement, $b = 0.14$, SE $= 0.08$; 95% BCa CI [.004, .304]; $\kappa^2 = .098$, 95% BCa Cl [.014, .197]. The total effect of self-affirmation on acceptance was significant ($b = .31$, $p = .022$), but the direct effect was not ($b = .17$, $p = .141$). Thus, the impact of self-affirmation on message acceptance was mediated through engagement (Figure 8).
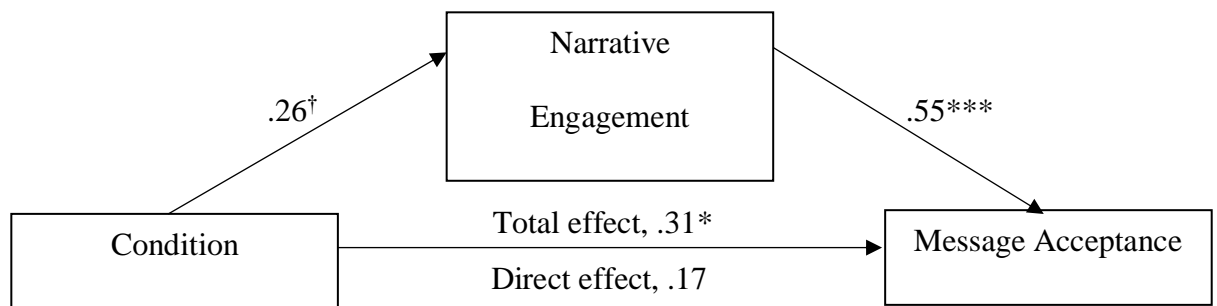
$^\dagger p = .056$, $*p < .05$, $*** p < .001$

Figure 8. Mediation of self-affirmation effects on message acceptance via narrative engagement.

Discussion

Narratives are an increasingly popular way of presenting health information, can easily be accessed online, and are frequently encountered in daily life without active search. They represent a significant and readily available form in which personally relevant health-risk information is conveyed. The principal goal of the current study was to establish whether self-affirmation could promote behaviour change following exposure to such information. Encouragingly, the answer is yes. Self-affirmed participants reported consuming significantly less alcohol at 7-day follow-up compared to baseline. There was no significant change in alcohol consumption in the control

group. In addition, self-affirmed participants showed more acceptance of the message and greater narrative engagement than did control participants; the impact of self-affirmation on acceptance was mediated by engagement.

The reduction in alcohol consumption in the experimental condition is of a magnitude that would make a difference to future health. At 5.43 units, it equates to approximately 44 grams over the 7 days and just over 6 grams of alcohol daily. Consuming an additional 10 grams of alcohol per day is known to carry significantly increased risks for cancers of the oral cavity and pharynx (29%), oesophagus (22%), larynx (44%), rectum (10%), liver (24%) and breast (12%) and increases the total cancer risk for women by 6% (Allen et al., 2009). The change in breast cancer risk is dose-dependent and increases with each alcoholic drink. The risk of liver cirrhosis is elevated among women who drink one drink daily and increases with volume of alcohol consumed (Rehm et al., 2010). Other immediate and longer-term health risks of alcohol also increase with consumption.

It is notable that self-affirmation impacted upon message acceptance through the pathways that have been identified in previous research as the means by which narrative information proves persuasive: by raising engagement with the information. It is also noteworthy that self-affirmation made a difference despite the possibility that systematic processing induced by self-affirmation could have reduced the persuasiveness of such case-based, experiential information. Future studies should explore the boundary conditions, including the impact of narrative quality (e.g., genuine or fabricated narrative) and how self-affirmation affects uptake of narrative information expressed in a variety of ways, from text through video to virtual reality, together with the duration over which the behaviour change is sustained.

The findings of this study must of course be interpreted within the constraints of its limitations. These include the use of a young female sample of drinkers, a brief follow-up period, and self-report measures of consumption. However, young women are an important group to sample, given the incidence of alcohol related problems in this group (especially in the UK). Furthermore, self-report measures of alcohol consumption have been shown to be at least as accurate as biomarkers (Del Boca & Noll, 2000). Nonetheless, future research should extend the findings with different samples and measures and a longer follow-up period.

In conclusion, the current findings are encouraging for those who wish to develop and use self-affirmation in interventions to promote health behaviour change. Research attention needs to be paid to the boundary conditions that limit the effectiveness of both self-affirmation and narrative methods, especially in combination. Nevertheless, it is clear that in principle self-affirmation can be used to positive effect with narrative as well as statistical information.

CHAPTER 4: Exploring Novel Ways of Presenting Health Information: Testing the Effectiveness of a Graphic Comic-Style Message and the Impact of Self-Affirmation and Systematic Processing

Abstract

Background Graphic narratives represent a relatively new means of presenting health information. However, no studies to date have compared the efficacy of a graphic narrative to a matched text-based health message. Study 1 explored whether a graphic narrative about the benefits of exercise was more effective than a traditional text-based message at promoting greater levels of open-minded responding to the health information, more positive cognitions indicative of motivation to change behaviour, and health behaviour change. Study 2 tested whether self-affirmation would enhance the efficacy of the same graphic narrative. Both studies also explored systematic processing as a potential moderator of effects.

Methods In Study 1, participants ($N = 156$) were randomly assigned to read a graphic narrative about the benefits of exercise or equivalent information presented non-graphically. In Study 2, participants ($N = 71$) were randomly allocated to complete either a self-affirmation manipulation or control task before reading the graphic version of the narrative from Study 1. In both studies, dependent variables comprising measures of open-minded responding to the health information (e.g., personal relevance, risk) and cognitions indicative of motivations to change behaviour (e.g., intention, anticipated regret) were assessed immediately after the experimental manipulation; exercise behaviour and further cognitions indicative of motivations to change behaviour (e.g., intention, coping efficacy) were assessed at 7-day follow-up. Participants also completed a measure of systematic processing.

Results The findings of Study 1 revealed no main effects of information type on any dependent variable. However, there was some limited evidence that systematic processing moderated the impact of information type on perceived risk, such that individuals low in systematic processing showed a trend towards reporting greater levels of risk when presented with information in the graphic narrative format compared to the non-graphic equivalent. Findings of Study 2 demonstrated no main effects of self-affirmation on responses to the graphic narrative, but some evidence of moderation by systematic processing. Specifically, individuals low in systematic processing displayed greater personal relevance of the graphic narrative in the self-affirmation (versus control) condition, as well as greater reported action control and action plans at follow-up. For those high in systematic processing, self-affirmation resulted in greater state reactance to the graphic narrative. At follow-up, individuals high in systematic processing reported lower exercise as well as lower intentions to exercise, but greater perceptions of coping efficacy.

Conclusion The graphic narrative format was no more effective than a traditional format at promoting positive outcomes. However, there was very limited evidence that systematic processing moderated these effects, with those low in systematic processing reporting greater risk when presented the graphic narrative. There was no evidence of any main effect of self-affirmation on outcomes, but the findings do suggest that systematic processing moderated the effectiveness of self-affirmation, such that it produced positive effects for those low in systematic processing and potential negative effects for those high in systematic processing. Future research should continue to investigate the combined impact of self-affirmation and graphic narratives on outcomes, alongside exploring potential individual difference variables, such as systematic processing.

Introduction

Health promoters are constantly searching for new ways to present health information in an engaging and persuasive manner (Parrott, 2004; Rimal & Lapinski, 2009; Sheeran, Klein, & Rothman, 2017). One such novel approach is the graphic narrative, which refers to "juxtaposed pictorial and other images in deliberate sequence, intended to convey information" (McCloud, 1994, p. 9). It is thought that information presented as a graphic narrative might be more likely to catch people's attention in a multimedia environment (Leung, Tripicchio, Agaronov, & Hou, 2014). However, there has been little systematic investigation of the efficacy of graphic narratives in promoting open-minded responding to the health information, cognitions indicative of motivation to change behaviour, or health behaviour change in comparison to traditional, text-based, health information. Similarly, it remains to be established whether techniques such as self-affirmation, which have been shown to be effective at enhancing persuasion when combined with more traditional forms of health promotion messages (e.g., Epton, Harris, Kane, van Koningsbruggen, & Sheeran, 2015; Sweeney & Moyer, 2015), may also impact upon the efficacy of graphic narrative health information. Accordingly, the aim of the current research was twofold: firstly, to compare the efficacy of graphic narrative health information to a closely matched text-based health message (Study 1) and, secondly, to explore whether self-affirmation increased the capacity of a graphic narrative to promote open-minded responding to the health information, cognitions indicative of motivation to change behaviour, and behaviour change at follow-up (Study 2). The opportunity was also taken in both studies to explore systematic processing as a potential moderator variable.

Graphic Narrative-Based Health Information

Graphic narratives are a part of popular culture. They are increasingly regarded to be a legitimate form of literature, suitable for a range of audiences (e.g., Green & Myers, 2010). Graphic narratives can be presented in a variety of formats, including as a single panel cartoon, comic strip or graphic novel (Green, 2013). Recently, graphic narratives have been applied in the health promotion context and a number of studies have explored the potential benefits of presenting health information in this format on message uptake (e.g., Gillies, Stork, & Bretman, 1990; Katz et al., 2014).

Presentation of health information in graphic narrative format represents an example of *entertainment-education*, which refers to the notion of "incorporating health and other educational messages into popular entertainment media" (Moyer-Gusé, 2008, p. 407). This often means that, unlike traditional health materials, graphic health information narratives typically convey health-threat information using enjoyment and humour (McAllister, 1992). Arguably, the reason for presenting health information in such a format is because graphic narratives are thought to be more attention-grabbing, interesting, engaging and potentially more persuasive than traditional forms of health information (Katz et al., 2014; Leung et al., 2014; McNicol, 2014).

Studies exploring the efficacy of graphic narratives as a format for conveying health information have typically administered pre- and post-intervention questionnaires assessing knowledge and attitudes relevant to the health information presented in the graphic narrative in order to establish whether the graphic narrative has resulted in effective information transfer and persuasion. For example, Katz et al. (2014) developed a graphic narrative conveying information about the Human Papillomavirus (HPV) vaccine. After reading the graphic narrative, parents of adolescents due to have the HPV vaccine reported greater vaccination knowledge and more positive attitudes towards

their child being vaccinated compared to baseline. Graphic narratives have also been used to improve knowledge, promote more positive cognitions, or both regarding sun safety (Putnam & Yanagisako, 1985), AIDS (Gillies, Stork, & Bretman, 1990), diet (Branscum, Sharma, Wang, Wilson, & Rojas-Guyler, 2013; Jemmott et al., 2011), back pain (Kovacs et al., 2011), safety information to prevent burns and safe pesticide use (Liebman, Juarez, Leyva, & Corona, 2007; Sinha, Patel, Kim, MacCorkle, & Watkins, 2011), and tobacco use (Prokhorov et al., 2013), with similar promising effects on outcomes.

Given the growing interest in presenting health information in graphic narrative format, there is a need for research to further assess the utility and effectiveness of the format. Previous studies exploring the efficacy of graphic narratives have focused on knowledge transfer at the expense of exploring other variables known to be important in terms of influencing persuasion and behaviour change (Conner & Norman, 2005). Moreover, no studies to date have compared the efficacy of a graphic narrative to a matched text-based health message. This is a critical omission of the literature if health promoters are considering replacing text-based information with graphic narrative formats in the public health context. Accordingly, the first aim of the current study was to explore the efficacy of a graphic narrative to a matched text-based health message on indices of open-minded responding to health information, cognitions indicative of motivation to change behaviour, and ultimately health behaviour change.

Individual Differences in Systematic Processing and Graphic Narrative Health Information

Critically, graphic narratives may not hold equal appeal for all recipients of health information. One core individual difference variable that might be predicted to moderate responses to information presented in a graphic narrative format is systematic

processing. Systematic processing refers to the extent to which people process information in a systematic manner – i.e., in a way that is "deeper and more cognitively energetic" (Griffin, Neuwirth, Giese, & Dunwoody, 2002, p. 706) – in an attempt to understand the content and personal relevance of information, including messages that present health-related risks (e.g., Chen & Chaiken, 1999; Smerecnik, Mesters, Candel, De Vries, & De Vries, 2012).

Individuals low in the tendency to process information systematically may be expected to be relatively open to health information presented as a graphic narrative. Such individuals will naturally be inclined to focus more on peripheral features of the health information, such as the context or format that it is presented in, rather than make effortful attempts to understand the content of the message (e.g., Griffin et al., 2002; Kahlor, Dunwoody, Griffin, Neuwirth, & Giese, 2003). Accordingly, the presentation format of the message, in this instance using a potentially engaging and interesting graphic narrative, may be more persuasive than the use of a traditional format presenting the same information for low systematic processors.

Alternatively, individuals high in systematic processing may be expected to be less swayed by information presented in a graphic narrative format. Specifically, these individuals may respond to health information based on its content, rather than the format in which it is presented (e.g., Kahlor et al., 2003). Therefore, it is likely that there will be no difference in their preference for a graphic narrative versus traditional presentation formats, assuming the content of the message is identical. It may even be possible that the graphic narrative format will dissuade people high in systematic processing as they may be more likely to assume that information presented in such a format is less serious and therefore less worthy of processing.

Indeed, this reasoning outlined above is supported by research from the broader narrative literature. Dillard and Hisler (2015) explored whether narrative information and information processing interacted to influence risk perceptions. Participants read instructions that either encouraged them to read subsequent health information in an experiential manner by considering their personal feelings and previous experiences, or encouraged them to appraise the information rationally, by employing logical reasoning and setting aside their emotions. They found that participants who were induced to think experientially before reading a first-person narrative about skin cancer reported greater risk of, and worry about, developing skin cancer than those induced to process the information rationally. As related to the current study, this may indicate that the graphic narrative is more persuasive for those who tend to process information less systematically and who naturally tend to focus on the superficial qualities of the information.

Accordingly, a second aim of Study 1 was to explore whether systematic processing would moderate the capacity of information presented in graphic narrative format to promote greater levels of open-minded responding to health information, more positive cognitions indicative of motivation to change behaviour and, ultimately, behaviour change.

Study 1

Study 1 aimed to explore the relative efficacy of information about the health benefits of exercise presented in graphic narrative (comic) format or a matched, more traditional, text-based (non-comic) format. Measures of open-minded responding to health information and cognitions indicative of motivation to change behaviour were assessed immediately after exposure to the message; exercise and further measures of cognitions indicative of motivation to change behaviour were assessed at 7-day follow-

up. The research goals were two-fold: firstly, to explore whether the graphic narrative health information format would be more effective at promoting positive outcomes than a matched, more traditional information format and, secondly, to explore whether systematic processing moderated any effects. With regard to the second research question, in line with the reasoning outlined above, it was hypothesised that information presented in a graphic narrative format would be more persuasive for those low in systematic processing, whereas the traditional format would be more persuasive for those high in systematic processing.

Exercise was chosen as the target health behaviour because a lack of physical activity is the cause of around 12% of mortality in developed countries (Kinmonth et al., 2008), and is a key risk factor for a range of diseases, such as cardiovascular diseases, cancer and diabetes (Booth, Roberts, & Laye, 2012). Worldwide, one in four adults do not engage in sufficient physical activity (World Health Organisation, 2016). Therefore, increasing exercise is a public health priority.

Method

Design and Procedure

Study 1 had a one-way between-subjects experimental design, with the independent variable being information format (comic vs. non-comic). Participants were recruited through social media (Facebook or Twitter) and the School of Psychology's participant database. At Time 1 the host website, Survey Gizmo, randomly allocated participants to the comic ($n = 71$) or non-comic ($n = 85$) condition. Measures to assess open-minded responding to health information and cognitions indicative of motivation to change behaviour were taken immediately post-information. After 7 days, participants were emailed a web-link to the follow-up questionnaire, which assessed their reported physical exercise and further cognitions indicative of motivation to

change behaviour. To encourage participation and deter attrition, participants recruited through social media ($n = 97$) were entered into a £50 cash prize draw and participants recruited through the participant database ($n = 59$) were compensated with course credits.

Participants

One hundred and fifty-eight participants completed the Time 1 questionnaire and met the inclusion criterion that they were exercising on fewer than 5 days a week. Two further participants (one from each condition) were removed from data analyses as their response to the information manipulation check (see *Materials* section) failed to confirm that they had read their health information. Accordingly, the final sample consisted of 156 participants. The mean age[6] of the sample was 21.74 years ($SD = 1.92$; range = 18-52 years), the majority were female (80.13%), White (83.97%) and students (85.05%). Of these 156, 110 responded to the follow-up questionnaire, resulting in an overall attrition of 33.73%.

Data were collected between November 2013 and April 2014. Data analysis did not commence until data from all participants had been collated. G Power (version 3.1), analysis indicates that 77 participants were needed to detect any effect size (*f*) of 0.15 required for power of 0.8, which suggests this study was sufficiently powered.

Materials

Participants completed an online questionnaire at two time points. The first page of each questionnaire contained instructions about consent and ethics. Unless stated otherwise, materials were presented in the order described below. A mean score was calculated for each participant on each scale, with higher scores indicating greater levels of the construct in question.

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[6] Three participants did not report their age.

Time 1 questionnaire.

Demographic information. The Time 1 questionnaire included demographic information about age, ethnicity and employment status (*employed*, *student*, *unemployed*, *other*).

Systematic processing. Systematic processing was assessed using the 5 systematic processing items from the Risk Information Seeking and Processing (RISP) scale (Griffin et al., 2002). An example item from this scale is: "After I encounter information about the health benefits of exercise, I am likely to stop and think about it." Responses were given on a 5-point scale ranging from *strongly disagree* [1] to *strongly agree* [5], $\alpha = .72$.

Baseline exercise behaviour. Participants were informed that, for the purpose of the current study, exercise was defined as, *'any moderate to vigorous physical activity, performed in your leisure time, that raises your heart rate, and results in you becoming warm and at least mildly out of breath'.* Following Jessop et al. (2014), participants completed the following question assessing their baseline exercise behaviour: "In the past seven days on how many days have you exercised for 30 minutes or more?". Responses were given on an eight-point scale ranging from *0* to *7*.

Average exercise behaviour. To assess participants' exercise behaviour in the average week, they responded to the question: "In the average week, on how many days do you exercise for 30 minutes or more?" (Jessop et al., 2014). Responses were given on an eight-point scale ranging from *0* to *7*.

Baseline Leisure-Time Physical Activity Questionnaire. Physical activity was measured using the Godin–Shephard Leisure-Time Physical Activity Questionnaire (LTPAQ; Godin, 2011). The LTPAQ correlates with measures of physical fitness (VO2max, body fat percentage) and can be used to classify people as fit versus unfit

(e.g., Amireault, Godin, Lacombe, & Sabiston, 2015; Godin, 2011). Total leisure activity is calculated by multiplying weekly frequencies of strenuous, moderate, and mild exercise by their respective metabolic equivalent task (MET) values of 9, 5, and 3 (1 MET is defined as the energy expenditure and caloric requirement at rest) and summing the products. In the current study, the default wording used in the measure was changed from "more than 15 minutes" to "at least 30 minutes" to be more consistent with the health information (Department of Health, 2015). Godin (2011) states that such changes should not affect validity of the measure.

Health information. Participants read health information detailing the benefits of exercise. In the comic condition, the information was titled 'Exercise: It's Easier Than You Think' and was adapted from a leaflet of the same name that formed part of the Luann Health Series, a comic strip by Greg Evans detailing the life of a young woman called Luann. As can be seen from Figure 9, the comic format presented the benefits of physical activity in terms of how you look and feel, as well as ways to exercise, using a sequence of images with text in which the central character is told by her friends about the benefits of exercise. She then begins to incorporate physical activity into her daily routine, noting the benefits as she progresses. Examples of her exercise include turning a chore into a workout and dancing to music. The non-comic format had an identical title to the comic information and was matched in that it provided the same examples about how to increase levels of exercise and listed the benefits of exercise. However, as can be seen in Figure 10, the main content of the information was not presented in a comic format.

Information check. To check that they had read the health information, participants were asked to respond to the open-ended question "how much time a day

Figure 9. The comic health information.

Figure 10. The non-comic health information.

did the information suggest exercising for?" Participants who did not respond with '30 minutes' were removed from the analysis.

Dependent measures. Open-minded responding to the health information and cognitions indicative of motivation to change behaviour were assessed using the following constructs. All items were measured on 7-point scales ranging from *strongly disagree* [1] to *strongly agree* [7] unless otherwise indicated.

Indices of open-minded responding to health information. The first set of dependent measures assessed aspects of open-minded responding to health information, as follows:

Message acceptance. Message acceptance was measured with two items (Harris & Napper, 2005). Participants were asked to rate how (i) believable (*unbelievable* [1] to *believable* [7]) and (ii) convincing (*unconvincing* [1] to *convincing* [7]) the health information was, $r(154) = .74$, $p < .001$

Personal relevance. Personal relevance was measured using two items (adapted from Napper, Harris, & Epton, 2009): "The information was relevant to me" and "I thought about how the information was personally relevant to me", $r(154) = .53$, $p < .001$.

Counter-arguing. Counter-arguing was assessed with three items (Silvia, 2006): "I was criticising the information", "I was thinking of points that went against the information's arguments" and "I was feeling sceptical of the information's arguments", $\alpha = .84$.

State reactance. Participants were asked to what extent they felt (i) irritated, (ii) angry and (iii) annoyed while reading the health information (Dillard & Shen, 2005), $\alpha = .87$.

Depth of thought. Depth of thought was measured using two items (adapted from Griffin & Harris, 2011): "I thought deeply about the information" and "I reflected on the content of the information" (*not at all* [1] to *very much* [7]), $r(154) = .59$, $p < .001$.

Negative affect. Negative affect was measured with two items (adapted from Griffin & Harris, 2011): "I worry about the consequences of my current level of exercise" and "I am worried about my current level of exercise", $r(154) = .59$, $p < .001$.

Risk. Feelings of risk for (i) feeling and (ii) looking as good as possible if the participant continued to exercise at their current level was assessed with four items (adapted from Harris & Napper, 2005; Janssen, van Osch, de Vries, & Lechner, 2013); "If you continue to exercise at your current level, how likely are you to look as good as you could?", "If you continue to exercise at your current level, how likely are you to feel as good as you could?" (*not at all likely* [1] to *very likely* [7]), "If I increase the amount I exercise, I feel that my chances of looking as good as I could are..." and: "If I increase the amount I exercise, I feel that my chances of feeling as good as I could are..." (*very small* [1] to *very big* [7]), $\alpha = .50$.

Imagination. Imagination was measured with two items (adapted from Harris & Napper, 2005): "To look as good as you could, do you need to increase your current level of exercise?" and "To feel as good as you could, do you need to increase your current level of exercise?" (*not at all* [1] to *very much* [7]), $r(154) = .63$, $p < .001$.

Cognitions indicative of motivation to change behaviour. The second set of dependent measures assessed various cognitions indicative of motivation to change behaviour. Items assessing cognitions (intention, identity, anticipated regret, attitude, action planning, and response efficacy) were framed in terms of increasing the amount

of exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days but are truncated below for ease of reading.

Intention. Intentions were measured using three items (Harris & Napper, 2005): "I intend to increase the amount I exercise", "I will try to increase the amount I exercise", and "I plan to increase the amount I exercise", $\alpha = .96$.

Identity. Identity was measured using three items (adapted from Sparks & Shepherd, 1992): "I think of myself as the sort of person who would want to increase the amount I exercise", "Increasing the amount I exercise is an important part of who I am", and "I am the type of person who would increase the amount I exercise", $\alpha = .77$.

Anticipated regret. Anticipated regret was assessed with two items: "If I did NOT increase the amount I exercise, it would bother me" and "If I did NOT increase the amount I exercise, I would regret it" (*very unlikely* [1] to *very likely* [7]; Conner, Godin, Sheeren & Germain, 2013), $r(154) = .91, p < .001$.

Attitude. Attitudes were measured using six items (Abraham & Sheeran, 2004). Participants were presented with the stem: "For me to increase the amount I exercise over the next 7 days would be..." to which they responded on six semantic differential scales (*unimportant* [1] to *important* [7], *harmful* [1] to *beneficial* [7], *worthless* [1] to *valuable* [7], *unenjoyable* [1] to *enjoyable* [7], *unpleasant* [1] to *pleasant* [7], and *boring* [1] to *exciting* [7]), $\alpha = .85$.

Action planning. Following the stem "I have made a detailed plan regarding ...", four items assessed action planning: (a) "... when to increase the amount I exercise", (b) "... where to increase the amount I exercise", (c) "... how to increase the amount I exercise", and (d) "... how often to increase the amount I exercise" (adapted from Luszczynska & Schwarzer, 2003), $\alpha = .95$.

Response efficacy. Response efficacy was measured using four items (adapted from Epton & Harris, 2008): "If I increase the amount I exercise it will make me look better", "If I increase the amount I exercise it will make me feel better", "Increasing the amount I exercise is an effective way to improve how I look", and "Increasing the amount I exercise is an effective way to improve how I feel", α = .87.

Follow-up questionnaire.

Follow-up exercise behaviour. Participants were reminded of the definition of exercise given at Time 1 and asked to respond to the same item used at Time 1 to assess their exercise behaviour over the past seven days.

Follow-up LTPAQ. Participants completed the same measure of physical activity (LTPAQ) as used at Time 1.

Action control. Action control was measured with six items (Sniehotta, Scholz, & Schwarzer, 2005). Participants were presented with the stem "During the last seven days, I have..." and responded to the following items: "...constantly monitored myself to see whether I have increased the amount I exercise", "...watched carefully that I have increased the amount I exercise", "…often had the intention on my mind to increase the amount I exercise", "…always been aware that I needed to increase the amount I exercise", "...really tried to increase the amount I exercise" and "…tried my best to act in accordance to my standards" (*strongly disagree* [1] to *strongly agree* [7]), α = .89.

Intention, identity and action plans. Intention, α = .98, identity, α = .74, and action plans, α = .94, for the following 7-day period were measured using the same items as used at Time 1.

Debrief. Participants completed a funnel debrief (from Chartrand & Bargh, 1996) to establish whether they had correctly identified the purpose of the study.

Results

At baseline, the average number of days on which participants reported exercising over the previous 7-days was 1.79 days ($SD = 1.37$, $Range = 0 – 4$ days) and the mean number of days in which participants reported exercising in the average week was 2.21 ($SD = 1.65$, range = 0 - 7). The mean baseline LTPAQ score was 27.81 ($SD = 23.46$, Range = 0 - 109), indicating that the participants were, on average, physically active (Godin, 2011). Means and standard deviations for all baseline measures are shown in Table 16 and correlations between dependent variables in Appendix C.

Table 16

Means (and SDs) for all Baseline Measures Reported in Study 1

	Comic	Non-comic
Age	21.21 (5.01)	22.18 (6.85)
Baseline attitude towards exercise	4.96 (1.49)	4.88 (1.52)
Systematic processing score	3.37 (0.74)	3.35 (0.68)
Baseline exercise behaviour[a]	1.83 (1.42)	1.75 (1.34)
Average exercise behaviour	2.21 (1.70)	2.20 (1.63)
Baseline LTPAQ	30.15 (23.95)	25.80 (23.02)

[a]Exercise over the past 7 days

Preliminary Analyses

Preliminary analyses were conducted to explore whether responders and non-responders differed on measures assessed pre-manipulation. One-way ANOVAs (responder, non-responder) revealed no significant differences in terms of age, $F(1, 151) = 0.02$, $p = .903$, $\eta_p^2 = .00$, baseline exercise behaviour (past 7-days), $F(1, 154) = 0.27$, $p = .601$, $\eta_p^2 = .01$, average exercise behaviour, $F(1, 153) = 2.74$, $p = .100$, $\eta_p^2 = .02$, baseline LTPAQ, $F(1, 147) = 0.27$, $p = .641$, $\eta_p^2 = .00$, baseline attitude, $F(1,$

154) = 0.00, p = .990, η_p^2 = .00, or systematic processing, $F(1, 154)$ = .25, p = .621, η_p^2 = .00. Chi-square analyses revealed no significant association between responding at Follow-up and ethnicity, $\chi^2(6, N = 154)$ = 7.57, p = .273, or condition, $\chi^2(1, N = 156)$ = 0.14, p = .734.

Further preliminary analyses were conducted to explore whether there was any difference between conditions on measures assessed pre-manipulation. A series of one-way ANOVAs (non-comic, comic) revealed no significant differences between conditions and age, $F(1, 151)$ = 0.96, p = .329, η_p^2 = .01, baseline exercise behaviour (past 7 days), $F(1, 154)$ = 0.12, p = .725, η_p^2 = .00, average exercise behaviour, $F(1, 153)$ = 0.00, p = .974, η_p^2 = .00, baseline LTPAQ score, $F(1, 147)$ = 1.22, p = .272, η_p^2 = .01, baseline attitude, $F(1, 154)$ = 0.04, p = .845, η_p^2 = .00, or systematic processing score, $F(1, 154)$ = 0.03, p = .862, η_p^2 = .00. Chi-square analyses revealed no significant association between condition and gender, $\chi^2(1, N = 156)$ = 0.18, p = .672, or ethnicity, $\chi^2(6, N = 156)$ = 3.95, p = .683.

Main Analyses

Indices of open-minded responding to health information and cognitions indicative of motivation to change behaviour. Mean scores on all dependent variables by condition at Time 1 are presented in Table 17.

A series of moderated hierarchical regression analyses were conducted to (i) test the hypothesis that information format would have a main effect on each measure of open-minded responding to health information and cognitions indicative of motivation to change behaviour and (ii) determine whether systematic processing moderated any impact of the information on these outcomes. For each analysis, condition (dummy coded; non-comic = 0, comic = 1) was entered as a predictor at step 1, mean-centred systematic processing scores were entered at step 2, and the interaction term between

condition and mean-centred systematic processing was entered at step 3. Resultant

analyses are reported in Tables 18 - 21. Significant interactions were decomposed using

simple slopes analyses (Aiken & West, 1991) in which the dependent variable was

regressed onto condition for those with low (1 *SD* below the mean), mean and high (1

SD above the mean) systematic processing scores.

Table 17

Means (and SDs) for Time 1 Dependent Measures Reported in Study 1

	Comic	Non-comic
Open-minded responding to health information		
Personal relevance	4.61 (1.25)	4.76 (1.24)
Depth of thought	3.84 (1.30)	3.90 (1.23)
Negative affect	4.27 (1.91)	4.19 (1.80)
Counter-arguing	2.98 (1.33)	3.17 (1.41)
Reactance (anger)	2.16 (1.10)	2.24 (1.48)
Risk	3.22 (1.76)	3.17 (1.57)
Affective risk	4.73 (1.23)	4.66 (1.36)
Imagination	5.36 (1.25)	5.16 (1.48)
Cognitions indicative of motivation to change behaviour		
Intentions	4.38 (1.64)	4.27 (1.85)
Identity	3.95 (1.42)	4.02 (1.52)
Anticipated regret	4.00 (1.84)	3.62 (1.84)
Attitude	4.71 (1.10)	4.58 (1.22)
Action plan	3.11 (1.88)	3.10 (1.74)
Response efficacy	5.35 (1.37)	5.34 (1.30)

Table 18

Summary of Hierarchical Multiple Regression Analyses Predicting Open-Minded Responding to the Health Information (Part 1) in Study 1

Variables entered	Message acceptance			Personal relevance			Counter-arguing			State reactance		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.06	.06	.06	-.06	-.06	-.06	-.07	-.07	-.07	-.03	-.03	-.03
Systematic processing		.16*	.16		.18	.12		.12	.09		-.05	-.02
Condition X Systematic processing			.003			.09			.04			.26*
R^2	.004	.029	.029	.003	.035	.020	.005	.018	.019	.001	.003	.037
Model F	0.51	2.31	1.53	0.54	2.78	2.06	0.71	1.39	0.96	0.14	0.23	0.80
ΔR^2		.026	.000		.032	.004		.013	.001		.002	.034
ΔF		4.05	0.00		5.00*	0.64		2.06	0.11		0.31	5.39*

*$p < .05$

Table 19

Summary of Hierarchical Multiple Regression Analyses Predicting Open-Minded Responding to the Health Message (Part 2) in Study 1

Variables entered	Depth of thought			Negative affect			Risk			Imagination		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	-.03	-.03	-.03	.02	.02	.02	.01	.01	.01	.07	.07	.07
Systematic processing		.27	.23		.03	.05		.11	.03		.03	.05
Condition X Systematic processing			-.01			-.03			.12			-.04
R^2	.001	.074	.074	.061	.077	.077	.000	.012	.019	.005	.006	.007
Model F	0.09	6.15	4.07	0.06	0.08	0.08	0.03	0.93	0.98	0.82	0.45	0.35
ΔR^2		.074	.000		.001	.001		.012	.007		.001	.001
ΔF		12.19	0.00		0.09	0.08		1.82	1.08		0.09	0.11

Table 20

Summary of Hierarchical Multiple Regression Analyses Predicting Cognitions Indicative of Motivation to Change Behaviour (Part 1) in Study 1

Variables entered	Intention			Identity			Anticipated Regret			Attitude		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.03	.03	.03	-.03	-.03	-.03	.10	.10	.10	.06	.06	.06
Systematic processing		.04	.00		.15†	.13		-.04	-.06		.19*	.22†
Condition X Systematic processing			.06			.02			.03			-.03
R^2	.001	.003	.005	.001	.022	.023	.011	.012	.013	.003	.042	.042
Model F	0.14	0.22	0.25	0.09	3.39	0.03	1.67	0.95	0.65	0.51	3.35	2.24
ΔR^2		.002	.002		.022	.000		.002	.000		.039	.000
ΔF		0.29	0.30		3.93†	0.03		0.24	0.05		6.17*	0.07

Table 21

Summary of Hierarchical Multiple Regression Analyses Predicting Cognitions Indicative of Motivation to Change Behaviour (Part 2) in Study 1

Variables entered	Response efficacy			Action plans		
	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.03	.03	.03	.00	.00	.00
Systematic processing		.04	.00		.09	.01
Condition X Systematic processing			.06			.12
R^2	.006	.038	.040	.000	.009	.016
Model F	0.90	2.29†	2.09	0.00	0.69	0.84
ΔR^2		.032	.002		.009	.007
ΔF		5.05*	0.33		1.38	1.13

$^\dagger p < .10$, $^* p < .05$

Analyses are only reported in text if they revealed either a significant direct effect of information format or significant condition X systematic processing interaction.

Main effects of information format. As can be seen from Tables 18 - 21, hierarchical regression analyses revealed no significant main effects of information format (entered at step 1) on any outcome measure.

Moderation by systematic processing. Analyses revealed that systematic processing moderated the impact of information format on state reactance as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model, $F(1, 152) = 5.78$, $p = .022$, $R^2 = .034$. Simple slopes analyses revealed that there was no impact of information format on state reactance for those with high, $\beta = .16$, $t(155) = 1.38$, $p = .171$, or mean levels of systematic processing, $\beta = -.03$, $t(155) = -0.38$, $p = .708$; however, for those low in systematic processing, there was a marginal impact of information format, $\beta = -.21$, $t(155) = -1.90$, $p = .059$, such that participants in the comic condition reported lower levels of state reactance than those in the non-comic condition (Figure 11).
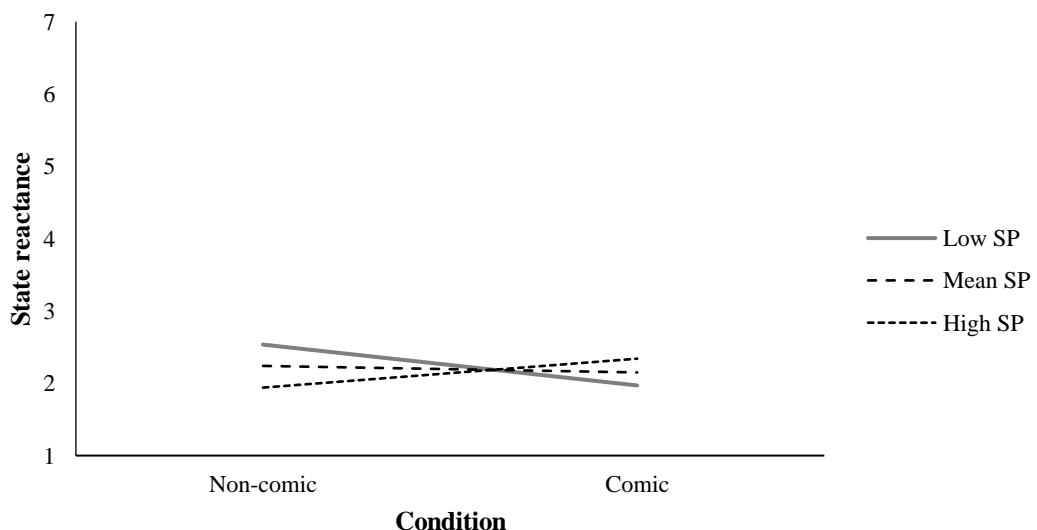
Figure 11. State reactance regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

Measures of behaviour change and cognitions indicative of motivation to change behaviour assessed at follow-up. Mean scores on all dependent variables by condition at follow-up are presented in Table 22.

Table 22

Means (and SDs) for Dependent Measures Reported at Follow-up in Study 1

	Comic	Non-comic
Follow-up LTPAQ	30.62 (20.05)	25.80 (23.48)
Follow-up exercise behaviour[a]	2.69 (1.82)	2.28 (1.67)
Action control	3.30 (1.78)	3.03 (1.33)
Intention	4.49 (1.87)	3.96 (1.74)
Identity	4.21 (1.49)	3.87 (1.38)
Action plans	3.25 (1.73)	2.67 (1.59)

[a]Exercise over the past 7 days

Hierarchical regression analyses were conducted to test whether there was a main effect of information format or a moderating effect of systematic processing on follow-up exercise behaviour and follow-up LTPAQ. For each analysis, either baseline exercise behaviour or baseline LTPAQ was entered as a predictor at step 1 respectively, condition (dummy coded; non-comic = 0, comic = 1) was entered at step 2, mean-centred systematic processing scores were entered at step 3, and the interaction term between condition and mean-centred systematic processing was entered at step 4. The resultant hierarchical regressions are summarised in Table 23.

A series of hierarchical regression analyses, identical to those conducted for the Time 1 measures in this study, explored the impact of information format and systematic processing on cognitions indicative of motivation to change behaviour assessed at follow-up (see Table 24).

Table 23

Summary of Hierarchical Multiple Regression Analyses Predicting Behaviour Change at Follow-up in Study 1

Variables entered	Follow-up exercise behaviour				Follow-up LTPAQ			
	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 4	Step 1	Step 2	Step 3	Step 4
Baseline behaviour	.58*	.03*	.57*	.57*	.66*	.66*	.66*	.65*
Condition		.06	.06	.06		.01	.01	.01
Systematic processing			.06	-.01			.04	-.01
Condition X Systematic processing				.10				.09
R^2	.331	.335	.339	.344	.434	.433	.435	.439
Model F	52.96*	26.68*	17.93*	13.63*	77.78*	38.54*	25.62*	19.32*
ΔR^2		.004	.004	.005		.000	.002	.004
ΔF		0.60	0.62	0.83		0.04	0.30	0.71

*$p <. 001$

Table 24

Summary of Hierarchical Multiple Regression Analyses Predicting Cognitions Indicative of Motivation to Change Behaviour Measures at Follow-up in Study 1

Variables entered	Action Control			Intention			Identity			Action Plans		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.09	.08	.08	.15	.15	.15	.12	.12	.12	.00	.00	.00
Systematic processing		.07	.03		-.01	.07		.06	-.04		.09	.01
Condition X Systematic processing			.05			-.08			.14			.12
R^2	.008	.012	.013	.022	.022	.025	.015	.018	.028	.000	.009	.016
Model F	0.83	.064	0.47	2.38	1.19	0.91	1.58	0.99	1.02	0.00	0.69	0.83
ΔR^2		.004	.001		.000	.003		.004	.010		.009	.007
ΔF		0.45	0.15		0.01	0.38		0.41	1.08		1.38	1.13

[†]$p < .10$, *$p <. 05$

As can be seen in Table 23, there was no evidence of any main effects of information format or evidence for moderation on any behavioural outcomes. Furthermore, there was no evidence of any main effects of information format or evidence of moderation on cognitions indicative of motivation to change behaviour assessed at Follow-up (Table 24).

Discussion

There was no evidence of any main effect of information format; therefore, there was no indication that the health information when presented in a graphic narrative format outperformed the same information presented in a more traditional, non-comic format. Moreover, there was only limited support for the hypothesis that systematic processing would moderate the impact of information format on outcomes. Specifically, for only one of the dependent variables – state reactance – the pattern of findings indicates that people low in systematic processing were more open to the graphic narrative. Although there was some evidence in support of the moderation hypothesis, it needs to be interpreted with great caution given the chances of making a type 1 error.

Study 2

What is not yet clear is whether techniques that have been shown to boost the efficacy of other information formats can similarly work for graphic narratives. Specifically, self-affirmation manipulations – where people reflect on their core values – have been shown to reduce defensiveness to personally relevant text-based health information, thereby increasing reported message acceptance and intentions and, ultimately, promoting health behaviour change (Epton et al., 2015; Sweeney & Moyer, 2015). While there is some evidence that a self-affirmation manipulation may similarly promote open-minded responding to health information presented in narrative format

(Sherman, Nelson, & Steele, 2000), there have been no prior applications of this intervention to health information presented in graphic narrative format.

Given that graphic narratives are thought to be more engaging and attention-grabbing (e.g., Katz et al., 2014), it is possible that there may be no additional benefit to message uptake as a result of self-affirming. The persuasive format of the graphic narrative may mean that there is less defensiveness for self-affirmation to overcome, which may render a self-affirmation manipulation redundant. Moreover, graphic narrative health information is typically focused on one character and this narrow focus may be perceived as relatively weak and unpersuasive when exposed to critical scrutiny through any systematic mind-set induced by self-affirmation (see Correll, Spencer, & Zanna, 2004). However, this line of reasoning also applies more generally to health information presented in a narrative format and previous research indicates that self-affirming before presentation of narratives seems to be beneficial in that context (e.g., Chapter 3; Sherman et al., 2000).

Accordingly, the first aim of Study 2 was to explore whether a self-affirmation manipulation, when presented in combination with the graphic narrative (comic) highlighting the benefits of exercise used in Study 1, would promote more open-minded responding to the information, higher scores on cognitions indicative of motivation to change behaviour and health behaviour change. Measures of open-minded responding and cognitions indicative of motivation to change behaviour were assessed immediately after exposure to the graphic narrative; exercise and further cognitions indicative of motivation to change behaviour were assessed at 7-day follow-up. A second aim of the current study was to explore whether systematic processing might moderate any effects of self-affirmation.

Method

Design and Procedure

Study 2 had a one-way between-subjects experimental design. Facebook or Twitter were used to contact potential participants, who were asked if they would be willing to complete a study about exercise. This introductory message contained a web-link to the baseline questionnaire. At Time 1 the host website, Survey Gizmo, randomly allocated participants to the self-affirmation ($n = 36$) or control ($n = 35$) condition after they had completed the systematic processing measure (see *Materials*). Measures to assess open-minded responding and cognitions indicative of motivation to change behaviour were assessed immediately post-manipulation. After 7 days, participants were sent a web-link via email to the Follow-up questionnaire, which assessed their physical exercise and further cognitions indicative of motivation to change behaviour. To encourage participation and deter attrition, participants completing both parts of the study were entered into a £50 cash prize draw.

Participants

Seventy-six participants completed the Time 1 questionnaire and met the inclusion criterion by reporting that they were exercising on fewer than 5 days a week. Two further participants (one from each condition) were removed as their response to the information check question (see *Materials*) failed to confirm that they had read their health information. Additionally, three participants (self-affirmation $n = 2$) were removed as their response to the debrief (see *Materials*) indicated that they were aware of the purpose of the study. Accordingly, the final sample consisted of 71 participants. The mean age of the sample was 27.34 years ($SD = 10.40$; range = 18-68), the majority were female (61.97%) and White (85.92%). Just under half the sample were students

(47.89%). Of the 71, 51 completed the Follow-up questionnaire, resulting in an overall attrition rate of 28.17%.

Data were collected between March and June 2015. Data analysis did not commence until data from all participants had been collated. G Power (version 3.1), analysis, however, indicated that 77 participants were needed to detect an effect size (f) of 0.15 required for power of 0.8, suggesting this study was underpowered.

Materials

Time 1 Questionnaire.

Demographic information. The measures of demographic information were identical to those used in Study 1.

Baseline exercise behaviour, average exercise behaviour and baseline LTPAQ. The measures of baseline exercise behaviour, average exercise behaviour and baseline LTPAQ (from Godin, 2011) were identical to those used in Study 1.

Systematic processing. Participants' tendency to systematically process information was assessed with the systematic processing measure, adapted from Griffin et al. (2002) as detailed in Study 1, α = . 70[7].

Self-affirmation manipulation. Following a method used widely in previous studies (e.g., Harris, Brearley, Sheeran, Barker, Klein, et al., 2015; Harris & Napper, 2005), participants in the self-affirmation condition were asked to indicate their most important value (e.g., kindness, spontaneity), give three examples of why the chosen value was important to them, and provide one example of something they had done to demonstrate its importance. In the control condition, participants were asked to select

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[7] Because of an error in the survey set-up, the systematic processing measure in Study 2 used a 7-point Likert scale whereas it was measured using a 5-point scale in Study 1.

their least important value, give three examples of why the chosen value could be important to someone else, and describe something that person could do to demonstrate its importance.

Immediately after the self-affirmation manipulation participants were asked to respond to the question "How important to you is the value you chose to write about?" (*extremely unimportant* [1] to *extremely important* [7]).

Self-affirmation manipulation check. Two items (Napper, Harris, & Epton, 2009) were placed after the Time 1 dependent measures to retrospectively assess the success of the self-affirmation manipulation, "The task about values made me aware of… (i) "...who I am" and (ii) "...my values" (*strongly disagree* [1] to *strongly agree* [7]), $r(68) = .81$, $p < .001$.

Health information. The comic health information was identical to that used in Study 1.

Dependent measures.

Open-minded responding to health information. Participants completed the same indices of message acceptance, $r(69) = .69$, $p < .001$, personal relevance, $r(69) = .61$, $p < .001$, depth of thought, $r(69) = .61$, $p < .001$, negative affect, $r(69) = .94$, $p < .001$, counter-arguing, $\alpha = .77$, state reactance, $\alpha = .85$, risk, $r(69) = .87$, $p < .001$, affective risk, $r(69) = .73$, $p < .001$, and imagination, $r(69) = .78$, $p < .001$, as in Study 1. Message derogation was also measured as a further indicator of open-minded responding to the health information using two items (Ruiter, Verplanken, Kok, & Werrij, 2003): participants rated to what extent the health information was (i) distorted and (ii) exaggerated, (*not at all* [1] to *very much* [7]), $r(69) = .35$, $p = .003$.

Cognitions indicative of motivation to change behaviour. Participants completed the same indices of intention, $\alpha = .97$, identity, $\alpha = .72$, anticipated regret, $r(69) = .92$, p

< .001, attitude, α = 83, response efficacy, $r(69) = .68$, $p < .001$, and action plans, α = .93, as in Study 1.

Coping efficacy was also measured as a further cognition indicative of behaviour change using two items (adapted from Wiedemann, Schüz, Sniehotta, Scholz, & Schwarzer, 2009). Participants were presented with the stem "I am confident that I can increase the amount I exercise..." and two items, "...even when things are not going well for me" and "...even if I find myself in situations in which this might be difficult" (*strongly disagree* [1] to *strongly agree* [7]), $r(69) = .86$, $p < .001$.

Follow-up questionnaire.

Participants completed the same measures of follow-up exercise behaviour, follow-up LTPAQ, action control, α = .87, intention, α = .99, identity, α = .76, and action plans α = .95, as used in the follow-up questionnaire for Study 1. Coping efficacy was also measured again at this time point, using the same items as at Time 1, $r(52) = .71$, $p < .001$.

Debrief. Participants completed the same debrief as in Study 1 (from Chartrand & Bargh, 1996) to establish whether they had correctly identified the purpose of the study.

Results

At baseline, the mean number of days in which participants reported exercising over the previous 7 days was 2.03 days ($SD = 1.41$, range = 0 - 4) and in the average week was 2.17 days ($SD = 1.48$, range = 0 - 5). The mean baseline LTPAQ score was 29.69 ($SD = 22.16$, range = 0 - 104), suggesting that the participants were, on average, physically active (Godin, 2011). Means and standard deviations for all baseline measures are shown in Table 25 and correlations between dependent variables are reported in Appendix C.

Table 25

Means (and SDs) for all Baseline Measures in Study 2

	Control	Self-affirmation
Age	27.94 (11.66)	26.69 (9.17)
Baseline attitude	5.31 (1.45)	5.04 (1.62)
Systematic processing	4.46 (0.99)	4.72 (1.00)
Baseline behaviour (past 7 days)	1.97 (1.22)	2.08 (1.59)
Average behaviour (7 day period)	2.23 (1.41)	2.11 (1.57)
Baseline LTPAQ	31.33 (22.21)	28.14 (22.32)

Preliminary Analyses

Preliminary analyses were conducted to explore whether responders and non-responders differed on measures assessed pre-manipulation. One-way ANOVAs (responder, non-responder) revealed no significant differences in terms of age, $F(1, 69) = 0.62$, $p = .432$, $\eta_p^2 = .01$, baseline exercise behaviour, $F(1, 69) = 0.69$, $p = .409$, $\eta_p^2 = .01$, average exercise behaviour, $F(1, 68) = 0.23$, $p = .635$, $\eta_p^2 = .00$, baseline LTPAQ, $F(1, 69) = 2.61$, $p = .112$, $\eta_p^2 = .05$, baseline attitude, $F(1, 69) = 0.01$, $p = .926$, $\eta_p^2 = .00$, or systematic processing, $F(1, 69) = 0.33$, $p = .571$, $\eta_p^2 = .01$. Chi-square analyses revealed no significant association between responding at follow-up and ethnicity, $\chi^2(5, N = 58) = 1.18$, $p = .953$, or condition, $\chi^2(1, N = 58) = 0.49$, $p = .691$.

Further preliminary analyses were conducted to explore whether there was any difference between conditions on measures assessed pre-manipulation. A series of one-way ANOVAs (control, self-affirmation) revealed no significant differences between conditions in age $F(1, 68) = 0.25$, $p = .620$, $\eta_p^2 = .00$, baseline exercise behaviour, $F(1, 69) = 0.11$, $p = .741$, $\eta_p^2 = .00$, average exercise behaviour, $F(1, 68)$, 0.10, $p = .750$, $\eta_p^2 =$

.00, baseline LTPAQ, $F(1, 66) = 0.35$, $p = .557$, $\eta_p^2 = .01$, baseline attitude $F(1, 69) = 0.56$, $p = .457$, $\eta_p^2 = .01$, or systematic processing score, $F(1, 69) = 1.19$, $p = .279$, $\eta_p^2 = .02$. Chi-square analyses revealed no association between condition and gender $\chi^2(1, N = 71) = .68$, $p = .409$, or ethnicity, $\chi^2(5, N = 71) = 4.67$, $p = .457$.

As expected, there was a significant effect of condition on the importance of the value selected: participants in the self-affirmation condition chose to write about a more important value ($M = 6.17$, $SD = 1.50$) than those in the control condition ($M = 2.46$, $SD = 1.46$), $F(1, 69)$, 11.08, $p < .001$, $\eta_p^2 = .62$. There was also a significant effect of condition on the retrospective self-affirmation manipulation check items: participants in the self-affirmation condition ($M = 5.18$, $SD = 1.24$) had higher scores on this measure than those in the control condition ($M = 3.82$, $SD = 1.57$), $F(1, 68)$, 15.84, $p < .001$, $\eta_p^2 = .19$.

Main Analyses

Indices of open-minded responding to health information and cognitions indicative of motivation to change behaviour. Mean scores on all of the dependent variables by condition at Time 1 are presented in Table 26.

A series of moderated regression analyses were conducted to (i) test the hypotheses that self-affirmation would have a main effect on each measure of open-minded responding to the health risk information and cognitions indicative of motivation to change behaviour and (ii) determine whether systematic processing moderated any impact of self-affirmation on outcomes. For each analysis, condition (dummy coded; control = 0, self-affirmation = 1) was entered as a predictor at step 1, mean-centred systematic processing scores were entered at step 2 and the interaction term between condition and mean-centred systematic processing was entered at step 3. Resultant analyses are reported in Tables 27 - 30.

Table 26

Means (and SDs) for all Time 1 Measures Reported in Study 2

	Control	Self-affirmation
Open-minded responding to health information		
Personal relevance	4.13 (1.69)	4.74 (1.41)
Depth of thought	3.21 (1.49)	3.90 (1.52)
Message derogation	3.13 (0.89)	2.93 (1.18)
Counter-arguing	2.90 (1.27)	3.05 (1.31)
Negative affect	3.87 (1.96)	3.62 (2.10)
Anger	2.14 (1.27)	2.19 (1.22)
Risk	3.43 (1.79)	3.28 (1.90)
Imagination	5.41 (1.49)	5.24 (1.61)
Cognitions indicative of motivation to change behaviour		
Intentions	4.50 (1.96)	4.18 (1.87)
Attitude	4.79 (1.05)	4.57 (1.22)
Identity	4.17 (1.55)	3.64 (1.89)
Anticipated regret	4.03 (2.09)	4.01 (1.97)
Affective risk	4.19 (1.55)	4.71 (1.02)
Action plan	2.99 (1.60)	3.22 (1.96)
Response efficacy	4.03 (1.63)	3.33 (1.32)
Coping efficacy	3.05 (1.37)	3.17 (1.60)

As in Study 1, significant interactions were decomposed using simple slopes analyses (Aiken & West, 1991) in which the dependent variable was regressed onto condition for those with low (1 *SD* below the mean), mean and high (1 *SD* above the mean)

systematic processing scores. Analyses are only reported in the text if they revealed a significant main effect of self-affirmation or significant self-affirmation X systematic processing interaction.

Main effects of self-affirmation. Hierarchical multiple regression analyses revealed that there was no main effect of self-affirmation (entered at step 1) on any outcome measure.

Moderation by systematic processing.

Personal relevance. Systematic processing moderated the impact of self-affirmation on personal relevance as evidenced by the fact that the interaction term (entered at Step 3) significantly increased the variance accounted for by the model, $\Delta F(1, 67) = 3.99$, $p = .050$, $\Delta R^2 = .050$. Simple slopes revealed that there was a significant effect of self-affirmation on personal relevance when systematic processing was low, $\beta = .38$, $t(70) = 2.40$, $p = .019$ (Figure 12) with those in the self-affirmation condition reporting greater personal relevance of the information compared to participants in the control condition.
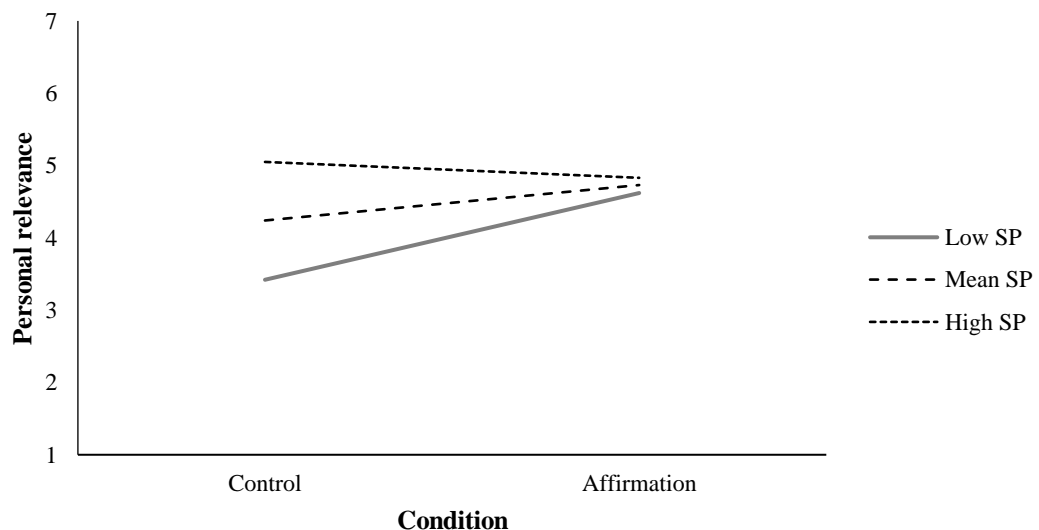
Figure 12. Personal relevance regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

condition. There was no impact of self-affirmation for individuals with mean, $\beta = .16$, $t(70) = 1.39$, $p = .171$, or high levels of systematic processing, $\beta = -.07$, $t(70) = -0.44$, $p = .662$.

   State reactance. Systematic processing moderated the impact of self-affirmation on state reactance as evidenced by the fact that the interaction term (entered at Step 3) significantly increased the variance accounted for by the model, $\Delta F(1, 67) = 7.43$, $p = .008$, $\Delta R^2 = .095$. Simple slopes analyses revealed self-affirmation significantly affected state reactance when systematic processing was high, $\beta = .36$, $t(70) = 2.24$, $p = .028$ (Figure 13) with those in the self-affirmation condition reporting greater reactance to the comic compared to those in the control condition. There was no impact of self-affirmation for individuals with mean, $\beta = .16$, $t(70) = 1.39$, $p = .171$, or low levels of systematic processing, $\beta = -.26$, $t(70) = -1.62$, $p = .109$.

Table 27

Summary of Hierarchical Multiple Regression Analyses Predicting Open-Minded Responding to the Health Message (Part 1) in Study 2

Variables entered	Message acceptance			Personal relevance			Counter-arguing			State reactance		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.14	.11	.11	.19	.16	.16	.06	.07	.07	.02	.05	.05
Systematic processing		.23†	.19		-.29*	.52**		-.09	-.20		-.22†	-.54**
Condition X Systematic processing			.05			-.32*			.16			.44**
R^2	.019	.070	.072	.083	.117	.167	.003	.010	.023	.000	.048	.143
Model F	1.34	2.57†	1.72	2.70	4.53*	4.47**	0.21	0.35	0.52	0.30	1.71	3.72*
ΔR^2		.051	.001		.080	.050		.007	.012		.047	.095
ΔF		3.74†	0.09		6.15*	3.99*		0.49	0.85		3.38†	7.43**

†$p < .10$, *$p < .05$, **$p < .01$

Table 28

Summary of Hierarchical Multiple Regression Analyses Predicting Open-Minded Responding to the Health Message (Part 2) in Study 2

Variables entered	Depth of thought			Negative affect			Risk			Imagination			Message derogation		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.23†	.19	.18	-.06	-.08	-.07	.08	.05	.05	-.06	-.08	-.08	-.10	-.09	-.09
Systematic processing		.32**	.41*		.11	-.03		.22†	.36*		.18	.25		-.08	-.08
Condition X Systematic processing			-.12			.18			-.21			-.10			.00
R^2	.051	.151	.158	.003	.015	.031	.006	.052	.072	.003	.035	.040	.009	.007	.000
Model F	3.72†	6.03**	4.19**	0.26	0.51	0.71	0.44	1.85	1.74	0.23	1.24	0.93	0.63	0.54	0.35
ΔR^2		.009	.007		.011	.016		.045	.021		.032	.005		.007	.009
ΔF		7.96**	0.58		0.76	1.11		3.25†	1.50		2.25	0.33		0.45	0.00

†$p < .10$, *$p <. 05$, **$p< .01$

Table 29

Summary of Hierarchical Multiple Regression Analyses Predicting Cognitions Indicative of Motivation to Change Behaviour (Part 1) in Study 2

Variables entered	Intention			Identity			Anticipated Regret			Attitude		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	-.08	-.11	-.11	-.19	-.23†	-.23†	-.00	-.03	-.03	-.10	-.12	-.12
Systematic processing		.17	.24		.28*	.38*		.22†	.32†		.17	.34*
Condition X Systematic processing			-.11			-.14			-.13			-.24
R^2	.007	.034	.039	.037	.114	.124	.000	.046	.056	.010	.039	.066
Model F	0.49	1.19	0.92	2.65	4.38*	3.16*	0.00	1.66	1.32	0.69	1.39	1.57
ΔR^2		.027	.006		.077	.010		.046	.009		.029	.027
ΔF		1.89	0.39		5.91*	0.77		3.12†	0.65		2.07	1.93

$^\dagger p < .10$, *$p < .05$

Table 30

Summary of Hierarchical Multiple Regression Analyses Predicting Cognitions Indicative of Motivation to Change Behaviour (Part 2) in Study 2

Variables entered	Response efficacy			Action plans			Coping efficacy		
	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	-.23[†]	-.23[†]	-.22	.07	.05	.05	.04	.00	.00
Systematic processing		.00	-.13		-.16	.21		.29*	.38*
Condition X Systematic processing			.17			-.06			-.13
R^2	.055	.055	.068	.004	.030	.032	.001	.085	.093
Model F	3.01[†]	1.48	1.21	0.31	1.05	0.73	0.10	3.16*	2.28[†]
ΔR^2		.000	.013		.025	.02		.084	.008
ΔF		0.00	0.70		1.79	0.13		6.22*	0.56

[†]$p < .10$, *$p < .05$
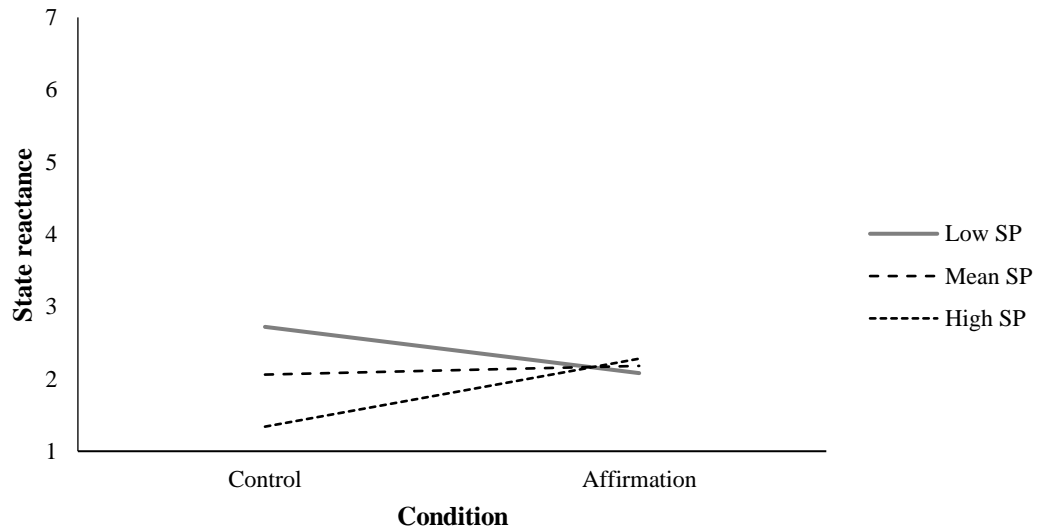
Figure 13. State reactance regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

Measures of behaviour change and cognitions indicative of motivation to change behaviour assessed at follow-up. Mean scores on all of the dependent variables by condition measured at follow-up are reported in Table 31.

Table 31

Means (and SDs) for all Dependent Measures Reported at Follow-up in Study 2

	Control	Self-affirmation
Follow-up exercise behaviour	2.50 (1.72)	2.10 (1.80)
Follow-up LTPAQ	27.43 (17.15)	27.94 (23.44)
Action control	2.93 (1.42)	3.31 (1.78)
Intention	4.14 (2.04)	3.74 (2.16)
Identity	3.93 (1.62)	3.59 (1.47)
Coping efficacy	4.85 (1.63)	4.82 (1.22)
Action Planning	2.93 (1.42)	2.31 (1.78)

Follow-up behaviour. Hierarchical regression analyses were conducted to test whether there was a main effect of self-affirmation or a moderating effect of systematic processing on follow-up exercise behaviour and follow-up LTPAQ. For each analysis, either baseline exercise behaviour or baseline LTPAQ was entered as a predictor at step 1 respectively, condition (dummy coded; control = 0, self-affirmation = 1) was entered at step 2, mean-centred systematic processing scores were entered at step 3 and the interaction term between condition and mean-centred systematic processing was entered at step 4. Analyses are only reported here if they revealed a significant main effect of self-affirmation or significant self-affirmation X systematic processing interaction.

As can be seen in Table 32, systematic processing moderated the impact of self-affirmation on follow-up exercise behaviour as evidenced by the fact that the interaction term (entered at Step 4) significantly increased the variance accounted for by the model, $\Delta F(1, 46) = 4.76$, $p = .034$, $\Delta R^2 = .063$. Simple slopes revealed that there was a significant effect of self-affirmation on follow-up exercise behaviour when systematic processing was high, $\beta = -.40$, $t(50) = -2.22$, $p = .032$ (Figure 14), with those in the self-affirmation condition reporting less exercise at follow-up compared to those in the control condition. There was no impact of self-affirmation for individuals with mean, $\beta = -.13$, $t(50) = -1.12$, $p = .275$, or low levels of systematic processing, $\beta = .14$, $t(50) = 0.86$, $p = .393$.

Table 32

Summary of Hierarchical Multiple Regression Analyses Predicting Behaviour at Follow-up in Study 2

Variables entered	Follow-up exercise behaviour					Follow-up LTPAQ		
	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 4	Step 1	Step 2	Step 3	Step 4
Baseline behaviour	.56***	.56***	.57***	.49***	.38**	.38**	.38**	.38**
Condition		-.09	-.10	-.13		.01	.01	-.01
Systematic processing			.08	.37			.01	.10
Condition X Systematic processing				-.40*				-.12
R^2	.314	.322	.328	.391	.143	.143	.143	.143
Model F	22.39***	11.37***	7.65***	7.39***	8.45**	4.17*	2.75†	2.09†
ΔR^2		.008	.007	.063		.000	.000	.005
ΔF		0.60	0.46	4.76*		0.00	0.00	0.29

†$p < .10$, *$p <. 05$, **$p < .01$, ***$p < .001$

Table 33

Summary of Hierarchical Multiple Regression Analyses Predicting Cognitions Indicative of Motivation to Change Behaviour Follow-up Study 2

Variables entered	T2 Action Control			T2 Intention			T2 Identity			T2 Action Plans			T2 Coping efficacy		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.18	.18	.14	-.07	-.07	-.10	-.11	-.14	-.16	.08	.06	.02	-.02	.00	.05
Systematic processing		.02	.44*		.01	.38†		.16	.32		.14	.52*		-.10	-.65
Condition X Systematic processing			-.56**			-.48*			-.20			-.51*			.73
R^2	.033	.033	.170	.004	.005	.107	.009	.035	.063	.006	.024	.137	.000	.010	.244
Model F	1.67	0.82	3.20	0.22	0.11	1.88	0.43	0.86	1.05	0.07	0.39	2.05	0.01	0.24	5.08**
ΔR^2		.000	.137		.000	.102		.026	.028		.018	.113		.010	.243
ΔF		0.01	7.74**		0.01	5.39*		1.29	1.43		0.90	6.14*		0.46	14.52***

†$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$
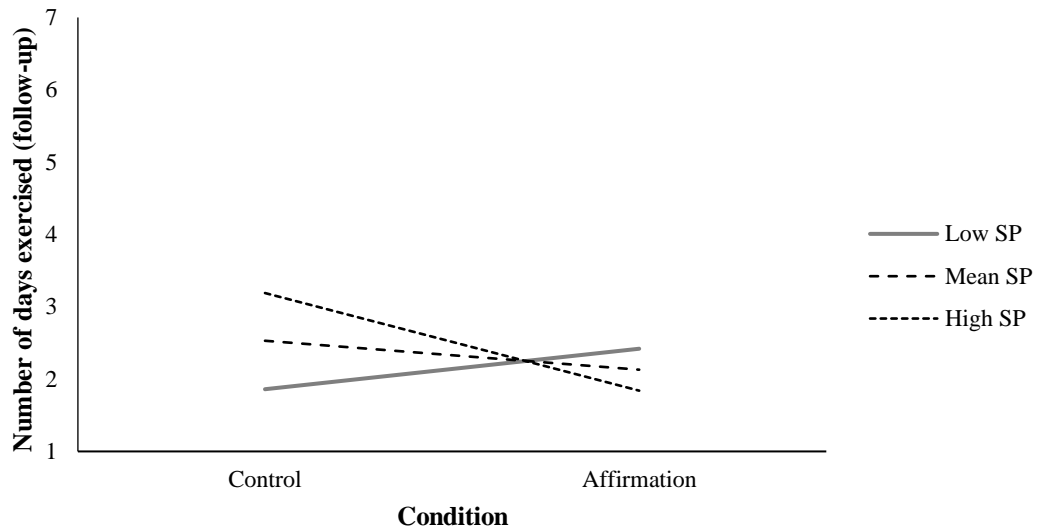
Figure 14. Number of days exercised at follow-up regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

Cognitions indicative of motivation to change behaviour assessed at follow-up. A series of hierarchical regression analyses, identical to those conducted for the Time 1 measures in this study, also explored the impact of self-affirmation and systematic processing on cognitions indicative of motivation to change behaviour assessed at follow-up (see Table 33). Analyses are only reported in the text if they revealed a significant main effect of self-affirmation or significant self-affirmation X systematic processing interaction.

Action control. Systematic processing moderated the impact of self-affirmation on action control as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model $\Delta F(1, 47) = 7.74$, $p = .008$, $\Delta R^2 = .137$. Simple slopes revealed that there was a significant effect of self-affirmation on action control when systematic processing was low, $\beta = .52$, $t(50) = 2.86$, $p = .006$ (Figure 15), with those in the self-affirmation condition reporting higher control over exercise compared to those in the control condition. There was no impact

of self-affirmation for individuals with mean, $\beta = .14$, $t(50) = 1.14$, $p = .304$, or high

levels of systematic processing, $\beta = -.24$, $t(50) = -1.18$, $p = .245$.
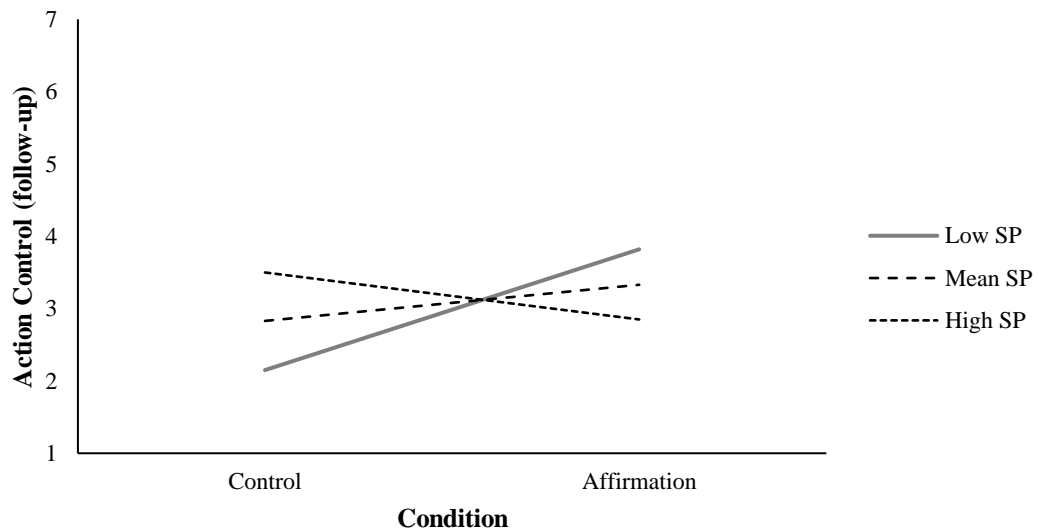
Figure 15. Action control at follow-up regressed onto condition for individuals with

low, mean and high levels of systematic processing (SP).

Intention (at follow-up). Systematic processing moderated the impact of self-

affirmation on intention as evidenced by the fact that the interaction term (entered at

step 3) significantly increased the variance accounted for by the model $\Delta F(1, 47) =$

5.39, $p = .025$, $\Delta R^2 = .102$. Simple slopes revealed that there was a significant effect of

self-affirmation on intention when systematic processing was high, $\beta = -.41$, $t(50) = -$

2.02, $p = .049$ (Figure 16), with those in the self-affirmation condition reporting lower

intention to exercise compared to those in the control condition. There was no impact of

self-affirmation for individuals with mean, $\beta = .16$, $t(50) = -0.81$, $p = .564$, or low levels

of systematic processing, $\beta = .55$, $t(50) = 0.94$, $p = .351$.
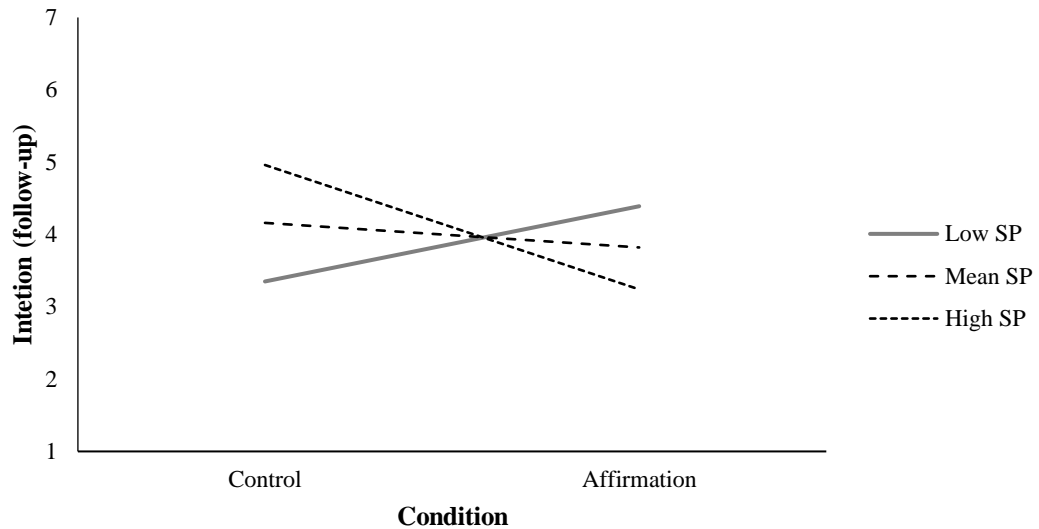
Figure 16. Intention at follow-up regressed onto condition for individuals with low,
mean and high levels of systematic processing (SP).

Coping efficacy (at follow-up). Systematic processing moderated the impact of
self-affirmation on coping efficacy as evidenced by the fact that the interaction term
(entered at step 3) significantly increased the variance accounted for by the model,
$\Delta F(1, 50) = 14.53$, $p < .001$, $\Delta R^2 = .234$. Simple slopes revealed that there was a
significant effect of self-affirmation on coping efficacy when systematic processing was
high, $\beta = .51$, $t(50) = 2.72$, $p = .009$) and low, $\beta = -.48$, $t(50) = -2.67$, $p = .010$ (Figure
17). Relative to controls, self-affirming those high in systematic processing resulted in
greater coping efficacy, whereas self-affirming those low in systematic processing
resulted in lower coping efficacy, compared to those in the control condition. There was
no impact of self-affirmation for individuals with mean levels of systematic processing,
$\beta = .02$, $t(50) = 0.12$, $p = .904$.
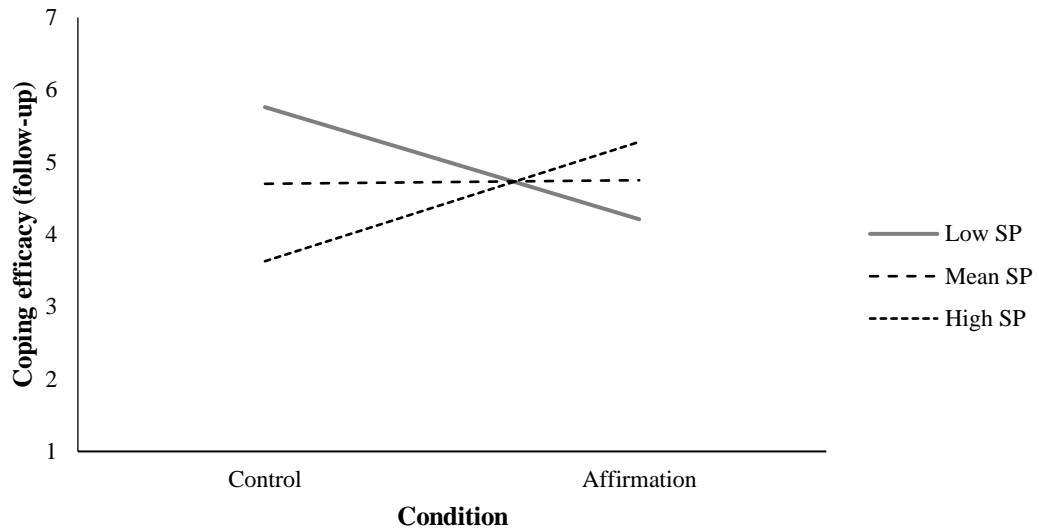
Figure 17. Coping efficacy at follow-up regressed onto condition for individuals with

low, mean and high levels of systematic processing (SP)

    Action plans (follow-up). Systematic processing moderated the impact of self-

affirmation on action plans as evidenced by the fact that the interaction term (entered at

step 3) significantly increased the variance accounted for by the model $\Delta F(1, 47) =$

6.14, $p = .017$, $\Delta R^2 = .113$. Simple slopes analyses revealed that there was no impact of

self-affirmation condition on action plans for those with high, $\beta = -.32$, $t(50) = -1.56$, p

$= .125$, or mean levels of systematic processing, $\beta = .02$, $t(50) = 0.16$, $p = .872$;

however, for those low in systematic processing, there was a marginal impact of

condition, $\beta = .36$, $t(50) = 1.98$, $p = .054$, such that participants in the self-affirmation

condition reported greater action planning than those in the control condition (Figure

18).
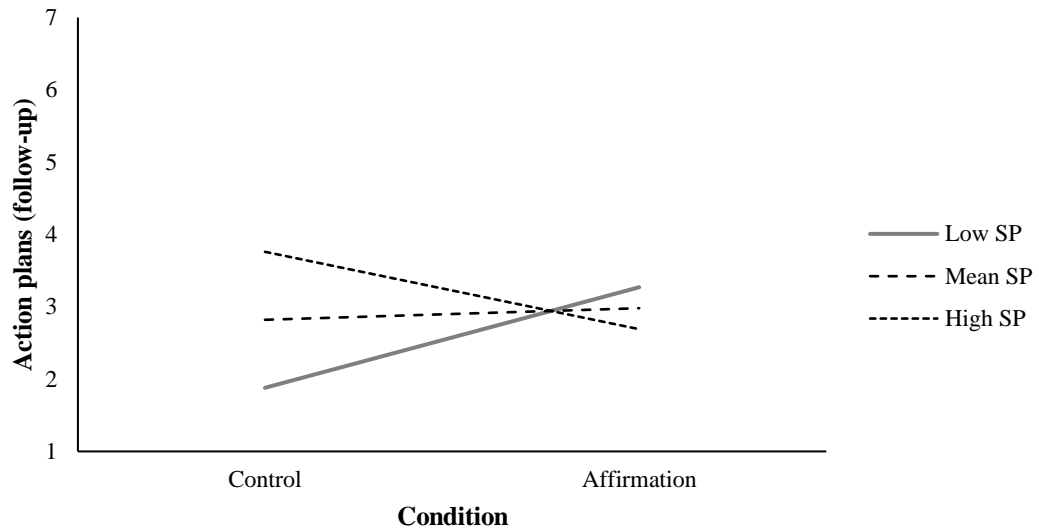
Figure 18. Action plans at follow-up regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

Discussion

Study 2 provided no evidence of a main effect of self-affirmation on responses to health information presented in a graphic narrative format. Specifically, there was no significant main effect of self-affirmation on any measure of open-minded responding to the graphic narrative, cognitions indicative of motivation to change behaviour (measured either immediately post-manipulation or at follow-up), or on behaviour at 7-day follow-up.

There was some support for the second hypothesis, that systematic processing would moderate the impact of self-affirmation on outcomes. Specifically, results suggest that people low in systematic processing reported greater personal relevance of the graphic narrative when self-affirmed (versus control), as well as greater reported action control and a trend towards greater action plans at follow-up. The pattern of results suggest that the self-affirmation manipulation had negative effects for individuals high in systematic processing: self-affirming resulted in greater state reactance to the graphic narrative. Furthermore, at follow-up, individuals high in

systematic processing reported exercising on fewer days over the past 7-day period compared to controls. Also at follow-up, the same group of individuals reported lower intentions to exercise in the next 7-day period, but also reported greater coping efficacy.

General Discussion

The current research had two overarching aims. The first was to compare the efficacy of health information about the benefits of exercise presented in a graphic narrative format to a closely matched more traditional format on measures of open-minded responding to the health information, cognitions indicative of motivation to change behaviour, and health behaviour change at follow-up. Furthermore, the opportunity was taken to explore the moderating role of systematic processing.

The findings of the first study revealed no evidence that information presented in a graphic narrative format was generally more persuasive than the same information presented in a traditional format, as indicated by the absence of main effects of presentation format on any of the outcome measures. This suggests that there may be no benefit to using the graphic narrative format when presenting health information over and above presenting the same information in a more traditional, text-based format. Nonetheless, Study 1 represents an important step forward by directly comparing the efficacy of a graphic narrative to a matched, more traditional health message, a comparison of which is lacking in the literature.

As outlined in the *Introduction*, few studies to date have explored the effects of this information format on variables known to increase persuasion and behaviour change and no studies have explored the relative efficacy of graphic narrative health information compared to matched traditional information. While the current research suggests that graphic narratives are just as effective as traditional formats of health information, there is much left to learn about the usefulness of graphic narratives in

health promotion contexts. Drawing from the broader narrative literature, it is possible that certain groups of people might be particularly receptive to health information presented in the graphic narrative format, such as people of lower literacy or ethnic minorities (e.g., Murphy, Frank, Chatterjee, Moran, Zhao, Amezola de Herrera, & Baezconde-Garbanati, 2015). Indeed, there is scope for more research into the graphic narrative format, with a particular focus on their relative efficacy for promoting behaviour change.

Furthermore, the findings of Study 1 revealed very limited support for the speculation that systematic processing might moderate the effect of information presentation format on outcomes. Specifically, it was found that systematic processing moderated the impact of information format on state reactance, such that there was a trend for individuals low in systematic processing to report less reactance to information presented in a graphic narrative format compared to the same information presented in a more traditional, text-based format. This provides some loose support for the notion that those low in systematic processing would respond more open-mindedly to information presented in a graphic narrative format. However, this finding needs to be interpreted with caution given that it only held for one of the dependent variables tested; hence there is a high likelihood of a type 1 error in which the null hypothesis is wrongly rejected. Furthermore, there was no evidence that format of the information had a differential impact for those with high or mean levels of systematic processing. As such, this supports the reasoning outlined in the *Introduction* that individuals high in systematic processing might be relatively un-swayed by the presentation format, instead focusing on the content which was the same in both messages.

The second aim of the current research was to explore whether self-affirmation might increase the capacity of a graphic narrative to promote greater levels of open-

minded responding to the health information, more positive cognitions indicative of motivation to change behaviour, and health behaviour change at follow-up. Once again, the opportunity was taken to explore the moderating role of systematic processing. With regards to this aim, Study 2 found no evidence that self-affirmation had any impact on outcomes, as evidenced by the absence of main effects of self-affirmation on any of the outcome measures. The findings of the current study are, therefore, suggestive of the fact that there may be no additional benefit to accrue from self-affirmation when presenting health information in a graphic narrative format. As reasoned in the introduction to Study 2, it is possible that because the graphic format is engaging and attention-grabbing, there is less defensiveness for self-affirmation to overcome. In this instance, therefore, a self-affirmation manipulation might be redundant. Nonetheless, Study 2 represents an important addition to the literature by exploring the impact of self-affirmation in combination with a previously unexplored form of health information.

Furthermore, Study 2 revealed some evidence of moderation by systematic processing. However, in this case, the direction of the findings were somewhat counter-intuitive. Specifically, it appeared that self-affirming low systematic processors resulted in greater reported personal relevance of the graphic narrative, as well as greater reported action control and a trend towards greater action plans at follow-up. For those high in systematic processing, the pattern of results suggest that the self-affirmation manipulation had potentially negative effects. Immediately after viewing the graphic narrative, self-affirmation in individuals high in systematic processing resulted in greater state reactance to the graphic narrative. Furthermore, at follow-up, individuals high in systematic processing reported exercising on fewer days over the past 7-day period compared to controls. Also at follow-up, the same group of individuals reported

lower intentions to exercise in the next 7-day period, but also reported greater coping efficacy.

One possible explanation for these finding could be gleamed from considering the availability of self-resources (Cohen & Sherman, 2014; Sherman & Cohen, 2006). As, arguably, the goal of a self-affirmation manipulation is to boost people's self-resources (Cohen & Sherman, 2014), it is possible that individuals who already possess a wide range of positive self-resources may respond to self-affirmation by feeling overly confident (e.g., Munro & Stansbury, 2009). In the current study, this may have resulted in individuals high in systematic processing feeling less threatened by the health information, which in turn, might have lead them to be less inclined to increase their exercise behaviour. Nonetheless, these findings support the growing body of literature suggesting that the impact of self-affirmation on outcomes is not necessarily uniform across people (e.g., Düring & Jessop, 2015; Ferrer et al., 2015). Therefore, this research further highlights the importance of taking individual difference variables such as systematic processing into account when considering the impact of self-affirmation on people's responses to health information.

There are limitations to the current research that should be acknowledged. One limitation to both studies is the reliance on self-report measures of behaviour. However, scores on the LTPAQ, for example, have been previously shown to have good reliability and to correlate with objective markers of physical fitness, including VO2max and percentage body fat (Godin, 2011). Nevertheless, research would benefit from more objective measures of physical activity, such as pedometers, apps, or wearable technology. Second, due to participant removal on key checks, Study 2 was underpowered. Therefore, the statistical tests that were conducted are unlikely to detect small effect sizes. Third, students and females were over-represented in Study 1;

however, the sample for Study 2 seemed much more representative of the general public. Future research should aim to characteristically represent the general public.

Notwithstanding the above, the present paper represents two studies which are the first to compare the efficacy of graphic narrative health information to a closely matched, more traditional health message and to explore the impact of self-affirmation on outcomes when presented with graphic narrative health information. Research findings call into question the superior efficacy of graphic narrative compared to traditional formats and suggested that there was no additional benefit to accrue from self-affirmation. Furthermore, the current findings highlight the importance of considering individual difference variables, such as systematic processing, when exploring the impact of self-affirmation. Future research is required to replicate these findings to see whether they hold across different populations and extend to different behavioural domains.

CHAPTER 5: Exploring the Impact of Self-Affirmation and Systematic Processing on Responses to the "Dry January" Health Campaign.

Abstract

Background *Dry January* is a UK-wide health promotion event encouraging abstinence from alcohol throughout January. Self-affirmation, the process of reflecting on important self-attributes, may help reduce resistance to participation in such campaigns. The current study explored whether a self-affirmation manipulation can enhance the efficacy of Dry January materials, which present both statistical and narrative information, at increasing levels of open-minded responding, positive cognitions indicative of motivations to change behaviour, and participation in Dry January. It also explored whether systematic processing would moderate any impact of self-affirmation on outcomes.

Methods In December 2014, one week after completing a baseline measure of systematic processing, participants ($N = 195$) were randomly allocated to either a self-affirmation or control condition before viewing informational materials about Dry January 2015. Participants then completed measures assessing indices of open-minded responding to the information (e.g., message derogation) and cognitions indicative of motivation to change behaviour (e.g., intention). Participation in Dry January was assessed at follow-up at the start of February 2015.

Findings Self-affirmation resulted in lower levels of message derogation. Furthermore, systematic processing moderated the effects of self-affirmation on negative affect, anticipated regret, attitudes, and coping efficacy. Relative to controls, self-affirmation among those low in systematic processing resulted in lower negative affect and less positive attitudes, whereas self-affirmation among those high in systematic processing

resulted in greater anticipated regret. There was no impact of self-affirmation on coping efficacy at different levels of systematic processing.

Discussion There was limited evidence of any main effects of self-affirmation on outcomes. However, the findings suggest that systematic processing moderated the effectiveness of self-affirmation such that it produced benefits for those high in systematic processing and potential negative effects for those low in systematic processing. Future research should further explore the potential benefit of incorporating self-affirmation alongside real-world health promotion materials and events.

Introduction

Excessive alcohol consumption is a nationwide problem: In England, more than nine million people drink in excess of the recommended daily limits and, in 2014, there were 8,697 alcohol-related deaths in the UK (Alcohol Concern, 2016a). One national public health promotion campaign that is trying to tackle this issue is *Dry January,* which challenges people to "have a break from booze" by stopping drinking alcohol for the month of January (www.dryjanuary.org.uk). Launched in 2013 by the charity Alcohol Concern, Dry January has become increasingly popular over the past few years – 4,500 people signed up for Dry January in 2013, rising to 45,000 people in 2015 (Alcohol Concern, 2015). According to Alcohol Concern, Dry January encourages people to think and talk about alcohol, aiming to improve people's lives by reducing the harm caused by alcohol and change drinking culture in the long term (Alcohol Concern, 2016a). The campaign is free to take part in and is well supported throughout the entire month, with participants receiving frequent email encouragement, having access to social media forums, and the opportunity to talk to experts.

Encouragingly, evidence suggests that there are both short and long term benefits of participating in Dry January. Indeed, Alcohol Concern claim that participants in Dry January lose weight, sleep better, have more energy and save money (Alcohol Concern, 2016). A small-scale study ($N = 10$) explored the effects of an alcohol-free month (Coghlan, 2014). Relative to baseline, participants had lower levels of liver fat, cholesterol and glucose in their body after abstaining from alcohol for one month. Moreover, participants reported better quality of sleep and improved concentration compared to baseline. de Visser, Robinson, and Bond (2016) reported that the positive effects of taking part in Dry January were still apparent after six months: Dry January participants reported consuming less alcohol, as well as feeling that they

were better able to refuse alcohol. Interestingly, even people taking part in the challenge who had had an alcoholic drink during January – thus failing to complete the month of abstinence – still reported healthier beliefs and drinking behaviour at follow-up.

In light of these positive effects of Dry January, it is important to maximise the persuasiveness of Dry January materials in order to encourage as many people as possible to participate in the event. Although not explicitly derived from psychological theory, it appears the materials used in the campaign contain several features that have been shown to make health information more persuasive.

Firstly, Dry January materials emphasise the benefits associated with an alcohol-free month, stating "go on, take time out and prove to yourself that you can say no to the tipple" (Alcohol Concern, 2016b). Such claims, arguably, are associated with perceptions of self-efficacy, which is thought to be a critical determinant of positive behaviour change (e.g., Milne, Sheeran, & Orbell, 2006; Peters, Ruiter, & Kok, 2012; Witte, 1992). Indeed, promoting self-efficacy (i.e., suggesting that the person can successfully perform the recommended protective actions) is one element within messages that evidence suggests is most likely to influence risk-reducing health behaviours (for a review see Ruiter, Kessels, Peters, & Kok, 2014). Indeed, de Visser et al. (2016) found that participants who had higher self-efficacy for refusing alcohol in different situations were more likely to complete Dry January than those lower in such drink refusal self-efficacy.

Secondly, the Dry January materials use a combination of statistical and narrative evidence in the information to persuade people to participate. For example, the statistical component of the materials presents numerical and abstract facts regarding participation in Dry January, whereas the narrative component presents testimonies from previous Dry January participants who tell the reader their experiences of taking

part in Dry January. For example, Emily (a person giving their experience in the information) says that "Dry January has taught me to look at drinking in a more respectful manner" (Alcohol Concern, 2014, p. 9). Recent research indicates that narrative and statistical evidence have differential persuasive effects (for a meta-analysis see Zebregs, van den Putte, Neijens, & de Graaf, 2015), and suggests that using a combination of statistical and narrative evidence is more effective than just using one form alone (Allen et al., 2000; Hinyard & Kreuter, 2007). It has been argued that narrative information might be particularly persuasive when the information has a high self-efficacy content (Hastall & Knobloch-Westerwick, 2013). Consequently, this would seem to support Alcohol Concern's decision to use narratives and focus on efficacy in their Dry January materials.

Nonetheless, it is possible that some people may reject the Dry January materials even in their present format due to defensive biases. There is much evidence to suggest that individuals may be motivated to process personally relevant health information defensively (e.g., Freeman, Hennessy, & Marzullo, 2001; Liberman & Chaiken, 1992; Reed & Aspinwall, 1998; van 't Riet & Ruiter, 2013) and, ironically, individuals for whom the information is most relevant are often the most likely to show the strongest defensive responses (for a review see van 't Riet & Ruiter, 2013). Such defensive responding can be explained from the perspective of self-affirmation theory (Steele, 1988).

According to self-affirmation theory, people are motivated to maintain their self-integrity, which refers to "a sense of global efficacy, an image of oneself as able to control important adaptive and moral outcomes in one's life" (Cohen & Sherman, 2014, p. 336; see also Steele, 1988). In order to take on board their need to participate in a campaign event such as Dry January, individuals may have to acknowledge that they

have been drinking an unwise level in the past, which may threaten their self-view as someone who is competent and capable (Steele, 1988). Accordingly, such individuals may respond with resistance to Dry January materials. Although this defensiveness is likely to protect self-integrity (Harris & Napper, 2005), it may mean that people ignore the materials and therefore do not benefit from participating in Dry January. Critically, however, self-affirmation theory also suggests a technique for reducing resistance to such information: giving people the chance to reinforce their feelings of self-integrity by reflecting on their core values or beliefs should overcome the threat to self-integrity (Cohen & Sherman, 2014). That is, reassured of their self-integrity, people should be able to process personally relevant information more openly without responding with resistance.

In support of this position, two meta-analyses have demonstrated that self-affirmation can encourage individuals to appraise personally relevant health information in a less defensive manner (Epton, Harris, Kane, van Koningsbruggen, & Sheeran, 2015; Sweeney & Moyer, 2015). For example, Epton et al. (2015) found that self-affirmation significantly increased acceptance of health information, promoted greater intentions to change behaviour, and encouraged actual behaviour change across a variety of health behaviours. However, to date, studies have not explored whether self-affirmation could be implemented to positive effect alongside real-world materials that aim to encourage people to take part in a health event, such as Dry January. This is surprising, as a benefit of self-affirmation manipulations is that they can be used in conjunction with existing information materials to persuade people to change (Harris & Epton, 2009).

Moreover, it is notable that few studies to date have explored the efficacy of combining self-affirmation with real-world existing health promotion materials (for

exceptions see e.g., Griffin & Harris, 2011; Harris, Mayle, Mabbott, & Napper, 2007;

Scott, Brown, Phair, Westland, & Schüz, 2013). The majority of studies testing the

effects of self-affirmation have used messages loosely based on existing health

promotion materials (Armitage, Harris, Hepton, & Napper, 2008; Epton & Harris, 2008;

Good & Abraham, 2011; Meier et al., 2015; Norman & Wrona-Clarke, 2016) or

information that has been formulated from websites or press releases (Arpan, Lee, &

Wang, 2016; Düring & Jessop, 2015; Harris & Napper, 2005; Knight & Norman, 2016;

Napper, Harris, & Epton, 2009). Moreover, as far as the author is aware, no studies to

date have explored the efficacy of self-affirmation in combination with real-world

health promotion materials to encourage people to take part in a specific event, such as

Dry January. Therefore, the first aim of the current study was to explore whether a self-

affirmation manipulation would promote (a) more open-minded responding towards the

Dry January materials, (b) more positive cognitions indicative of motivation to change

behaviour and, (c) ultimately, greater participation in Dry January.

A second goal of the present research was to explore the potential moderating

role of systematic processing on the impact of self-affirmation. Previous research has

shown that individual differences in the tendency to process information systematically

– which involves the "careful and extensive evaluation of information" (Griffin,

Neuwirth, Giese, & Dunwoody, 2002, p. 707) – appear to moderate the impact of self-

affirmation on outcomes. For example, the effect of self-affirmation used in conjunction

with a predominantly narrative health information leaflet was found to be moderated by

systematic processing (Chapter 2, this thesis). Specifically, self-affirmed

participants low in systematic processing (vs. control) reported consuming significantly

less alcohol at 7-day follow-up, despite initially reporting lower levels of risk (Study 1).

In a second study, a similar group of individuals reported lower personal relevance and

less negative affect (Study 2). In addition, the moderating impact of systematic processing on self-affirmation has been explored in combination with information presented in a comic format (Chapter 4), showing limited evidence that systematic processing may moderate the impact of self-affirmation on some outcomes (Study 2). However, it is yet to be explored whether systematic processing affects reactions to health information that is mixed in information format (i.e., narrative and statistical), such as the Dry January materials.

In light of the above reasoning, it was hypothesised that a self-affirmation manipulation would promote (a) more open-minded responding towards the Dry January materials, (b) more positive cognitions indicative of motivation to change behaviour, and (c), ultimately, greater participation in Dry January. Due to the exploratory nature of individual differences in systematic processing as a potential moderator, no specific directional hypotheses were made with regard to how people with different levels of systematic processing might respond to the Dry January materials.

Method

Design and Procedure

The study had a one-way, between-participants experimental design. Participants were recruited by emails sent to the mailing lists of several UK universities, research councils, councils and businesses, which invited people to take part in a study about Dry January. The message contained information about the study and interested recipients were asked to follow a link to an online site where they completed the baseline questionnaire. Participants who provided their email addresses at baseline were contacted a week later with an email containing the web link to the Time 1 questionnaire, where they were randomly allocated to the control ($n = 96$) or affirmation

(n = 99) condition by the host website, SurveyGizmo (see *Materials* section). At the start of February 2015, participants were sent a weblink via email to the follow-up questionnaire. As an incentive to participate and to deter attrition, a cash prize draw of £100 was offered to participants who completed all of the questionnaires. The designated committee of the host University granted ethics approval.

Participants

All participants completed measures of systematic processing, drink refusal self-efficacy and baseline attitudes towards having an alcohol-free month at baseline, At Time 1 (N = 208), participants completed the questionnaire before January 2015. All were alcohol consumers and had English as their first language. Of these, five participants in the *self-affirmation* condition and seven in the *control* condition were removed as their response to the information check (see *Materials* section) failed to confirm that they had read the Dry January information. One further participant in the *control* condition was removed due to not completing any dependent variable measures. Accordingly, the final sample consisted of 195 participants. The mean age was 32.91 years (SD = 11.79, range 18-67 years) and the majority were female (72.31%), employed (55.90%), and described their ethnicity as White (96.41%). Of these, 172 completed the Follow-up questionnaire, resulting in an overall attrition rate of 28.03%.

Materials

Participants completed a series of questionnaires over three time points (baseline, Time 1, follow-up). The first page of each questionnaire gave information about each stage of the study, consent and ethics. Unless otherwise stated, items were presented in the order described below and measured on 7-point scales ranging from *strongly disagree* [1] to *strongly agree* [7]. A mean score was calculated for each

participant on each scale, with higher scores indicating greater levels of the construct in question.

Baseline questionnaire.

Demographic information. Participants were asked to indicate their gender, age, nationality and employment status (*employed*, *student*, *unemployed*, *other*).

Systematic processing. The tendency to systematically process information was measured with five items (Griffin et al., 2002), for example: "After I encounter information about the health risks of alcohol consumption, I am likely to stop and think about it" and "If I need to act on information about the health risks of alcohol consumption, the more viewpoints I get the better". Responses were given on a 5-point scale, ranging from *strongly disagree* [1] to *strongly agree* [5], $\alpha = .69$.

Drink Refusal Self-Efficacy. Drink Refusal Self-Efficacy (DRSE) was assessed using nine items (on the scale v*ery difficult* [1] to *very easy* [7]; from Young, Oei, & Crook, 1991) across three subscales: Social pressure (e.g., "When my friends are drinking"), emotional relief (e.g., "When I am worried") and opportunistic drinking (e.g., "When I am watching TV"), $\alpha = .82$.

Baseline alcohol attitude. Baseline attitude towards alcohol consumption was assessed using two semantic differential items with the stem "Overall, my attitude towards drinking alcohol is…" (*extremely negative* [1] to *extremely positive* [7] and *extremely unfavourable* [1] to *extremely favourable* [7]), $r(193) = .78$, $p < .001$.

Time 1 questionnaire.

Drinking characteristics of the sample. Participants were asked to respond to the following items to assess their drinking history: "How often do you have a drink containing alcohol?" (alcohol frequency), "How many drinks containing alcohol do you have on a typical day when you are drinking?" (alcohol amount), and "How old were

you when you started drinking alcohol, not including small sips or tastes?" (age of first alcoholic drink). Participants were also asked "Since you started drinking, what is the longest period that you have ever had of NOT drinking alcohol?" (in days, months, and/or years) from which a dichotomous variable was created that identified those who had ever completed at least one month of abstinence. Participants' alcohol consumption frequency and volume, dependence and alcohol-related problems were assessed with the 10-item Alcohol Use Disorders Identification Test (AUDIT; Barbor, Higgins-Biddle, Saunders, & Monterio, 2001).

Self-affirmation manipulation. Using a method developed by Sherman et al. (2009), participants in the self-affirmation condition were asked to select their most important value (e.g., kindness, spontaneity), give three examples why this value was important to them and then provide an example demonstrating its importance. In the control condition, participants were asked to select their least important value, give three examples why this value could be important to someone else and something that person could do to demonstrate its importance.

Immediately after the self-affirmation manipulation participants were asked to respond to the question "How important to you is the value you chose to write about?" (*extremely unimportant* [1] to *extremely important* [7]).

Self-affirmation manipulation checks. Two items (Napper, Harris, & Epton, 2009) placed after the Time 1 dependent measures assessed identity and values: "The task about values made me aware of… (i) "…who I am" and (ii) "my values", $r(193) = .90, p < .001$.

Health information materials. Existing Dry January 2015 informational materials were presented to participants (http://www.dryjanuary.org.uk/wp-content/uploads/2014/01/38699-AC-Dry-Jan-Booklet_Digital.pdf?ver=1). Specifically,

participants viewed four pages from Alcohol Concern's digital booklet: page one was a cover page that welcomed readers to Alcohol Concern's Dry January 2015; page 2 (Figure 19) provided information about the Dry January challenge and stated that "last year more than 17,300 people signed up to Alcohol Concern's Dry January Campaign"; page 3 presented tips for abstaining from alcohol throughout Dry January; and page 4 (Figure 20) presented narrative experiences of those who had taken part in Dry January in 2014.

Health information check. To check whether participants had read the Dry January informational materials, they were asked to respond to the open-ended item "What was the information you just read about?".

Dependent measures: Participants next completed a series of measures assessing their open-minded responding towards the Dry January materials and cognitions indicative of motivation to change behaviour.

Indices of open-minded responding to Dry January materials.

Depth of thought. Depth of thought about the information was assessed with 2 items (Griffin & Harris, 2011): "I thought deeply about the information" and "I reflected on the content of the information." (*not at all* [1] to *very much* [7]), $r(193) = .85, p < .001$.

Message derogation. Message derogation was measured using two items (Ruiter, Verplanken, Kok, & Werrij, 2003): participants rated to what extent the health information was (i) distorted and (ii) exaggerated, $r(193) = .70, p < .001$.

Negative affect. Negative affect was measured with 2 items (adapted from Griffin & Harris, 2011): "I am worried about my current level of alcohol consumption" and "I worry about the consequences of my current level of alcohol consumption", $r(193) = .89, p < .001$.

Last year more than 17,300 people signed up to Alcohol Concern's Dry January® Campaign.

More than 25,000 took part in our online community, sharing experiences and cheering each other on.

Last year people told us that taking part in Dry January was a life changing experience for them.

The Dry January Challenge

Here's the thing, we all love talking about alcohol but are we having the right conversations?

We want you to join us for 31 days of booze free bliss (or sheer struggle depending on how you see things!)

We want you to go to that party, to turn up for that pub quiz, to go for that long weekend away, but ditch the wine and beer and choose a soft drink for company instead. People are bound to ask you what you're up to and hey presto you're talking about what you drink, why you drink, the last time you went for a month without a drink...

Last year people told us they enjoyed the challenge; some people lost weight, some slept better, almost everyone saved cash and said they'd try and reduce their drinking for the rest of the year.

So go on, sign up, join us and get ready to go dry.

www.dryjanuary.org.uk

Figure 19. Page 2 from the Dry January 2015 information materials.
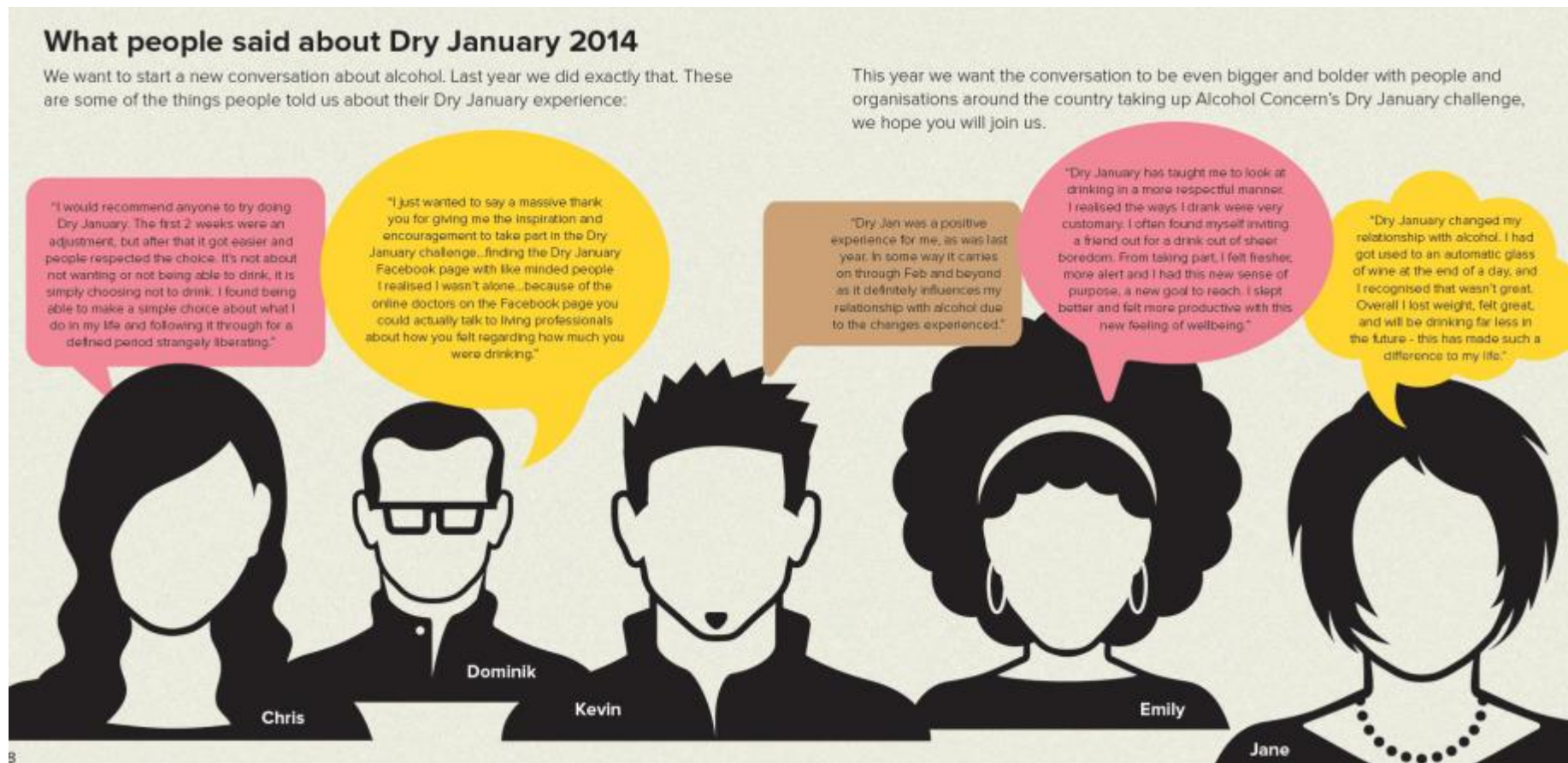
Figure 20. Narrative section from the Dry January 2015 information materials.

Cognitions indicative of motivation to change behaviour.

Intention. Intention was measured using three items (Harris & Napper, 2005): "I intend to stop drinking alcohol for the month of January", "I plan to stop drinking alcohol for the month of January" and "I will try to stop drinking alcohol for the month of January", $\alpha = .97$.

Identity. Identity was measured using three items (adapted from Sparks & Shepherd, 1992): "I am the type of person who would stop drinking alcohol for the month of January", "Stopping drinking alcohol for the month of January is an important part of who I am", and "I think of myself as the sort of person who would want to stop drinking alcohol for the month of January", $\alpha = .82$.

Anticipated regret. Anticipated regret was measured with two items (Conner, Godin, Sheeren & Germain, 2013): "I would feel regret if I did NOT stop drinking alcohol for the month of January" and "If I did NOT stop drinking alcohol for the month of January, I would regret it" (*I definitely will not* [1] to *I definitely will* [7]), r (193) = .89, $p < .001$.

Attitude. Attitudes were measured using six items from Abraham and Sheeran (2004). Participants were presented with the stem: "For me to stop drinking alcohol for the month of January would be..." to which they responded on six semantic differential scales (*unimportant* [1] to *important* [7], *harmful* [1] to *beneficial* [7], *worthless* [1] to *valuable* [7], *unenjoyable* [1] to *enjoyable* [7], *unpleasant* [1] to *pleasant* [7] and *boring* [1] to *exciting* [7]), $\alpha = .77$.

Response-efficacy. Response-efficacy was assessed using four items, derived from the Dry January informational materials: "Stopping drinking alcohol for the month of January would be an effective way for me to..." (i) "…lose weight", (ii) "…feel better", (iii) "…save money" and (iv) "…make a difference", $\alpha = .88$.

Self-efficacy. Self-efficacy was measured using two items (adapted from Epton & Harris, 2008): "It would be easy for me to stop drinking alcohol for the month of January" and "For me to stop drinking for the month of January would be" (*very difficult* [1] to *very easy* [7]), $r(194) = .97$, $p < .001$.

Coping self-efficacy. Coping efficacy was measured using two items (adapted from Wiedemann, Schüz, Sniehotta, Scholz, & Schwarzer, 2009). Participants were presented the stem "I am confident that I can stop drinking alcohol for the month of January..." to which they responded on two items, "...even when things are not going well for me" and "...even if I find myself in situations in which this might be difficult", $r(193) = .91$, $p < .001$.

Alcohol consumption plans for January. Participants' alcohol consumption plans for January were assessed with two items following the question "Which of the following best describes your plans for January?" (*drink more than I currently do* [1] to *stop drinking* [4] and *drink on more days than I currently do* [1] to *stop drinking* [4]), $r(193) = .91$, $p < .001$. These and the remaining Time 1 measures were created for the study.

Prior knowledge about Dry January. Participants were asked whether they had (i) heard of Dry January before and (ii) taken part in Dry January before (*yes/no*).

Information request. Participants were asked "Would you like to be given more information about ways to stop drinking in January?" as a proxy measure of behaviour.

Follow-up questionnaire. At the start of February, participants completed a follow-up questionnaire including the following sections:

Participation in Dry January. Participants were asked whether they had taken part in Dry January (*yes/no*).

Alcohol consumption during January. Participants were asked "On how many days in January did you have an alcoholic drink?" (possible responses ranged from *0 - 31*).

Drink Refusal Self-efficacy. DRSE was measured using the same measure as used in the baseline questionnaire, $\alpha = .82$.

Debrief. Participants completed a funnel debrief (from Chartrand & Bargh, 1996) to establish whether they had correctly identified the purpose of the study. None had.

Results

Participants' scores on all measures assessed pre-manipulation are summarised in Table 34.

Preliminary Analyses

Preliminary analyses were conducted to explore whether responders and non-responders between Time 1 and follow-up differed on measures assessed pre-manipulation. One-way ANOVAs (responder, non-responder) revealed no differences between conditions in terms of age, $F(1, 195) = 0.24$, $p = .623$, $\eta_p^2 = .001$, baseline attitude, $F(1, 195) = 3.40$, $p = .067$, $\eta_p^2 = .017$, baseline DRSE, $F(1, 195) = 0.97$, $p = .326$, $\eta_p^2 = .005$, age when they first started drinking alcohol, $F(1, 195) = 1.24$, $p = .267$, $\eta_p^2 = .006$, number of drinks typically consumed each day drinking alcohol, $F(1, 195) = 0.05$, $p = .816$, $\eta_p^2 = .000$, or AUDIT score, $F(1, 195) = 0.66$, $p = .417$, $\eta_p^2 = .003$. There was, however, marginally significant differences in systematic processing, with responders at follow-up showing a trend towards having higher systematic processing scores than non-responders ($n = 19$), $F(1, 195) = 3.82$, $p = .052$, $\eta_p^2 = .019$. As systematic processing is the explored in the current study as a moderating variable, it is included in each subsequent analysis, which will serve the purpose of

Table 34

Means (and SDs) for all Measures Assessed Pre-Manipulation

	All participants	Range	Condition	
			Control	Self-affirmation
Systematic processing	3.51 (0.67)	1 - 5	3.48 (0.68)	3.53 (0.67)
DRSE	5.80 (1.20)	2 -7	5.10 (1.19)	5.07 (1.21)
Baseline attitudes	4.81 (1.12)	1 - 7	4.86 (1.09)	4.77 (1.16)
Alcohol frequency[a]	1.82 (1.69)	0 - 7	1.90 (1.75)	1.74 (1.64)
Alcohol amount[b]	2.95 (1.83)	1 - 15	3.07 (1.98)	2.84 (1.68)
Age first alcohol drink[c]	15.95 (2.61)	5 - 38	16.24 (2.91)	15.67 (2.24)
% prior abstinent	86.29%	–	84.54%	88.00%
AUDIT score	7.50 (4.88)	2 –26	7.48 (4.93)	7.52 (4.85)

[a]How often participants reported having a drink containing alcohol, [b]How many drinks containing alcohol participants reported consuming on a typical day when you are drinking, [c]How old participants were when they started drinking alcohol, not including small sips or tastes, [d]Percentage of participants who had previously completed at least one month of abstinence from alcohol.

controlling for any potential differences between groups. Furthermore, there was a significant difference on the number of days a month typically consume alcohol on, with responders consuming alcohol on fewer days than non-responders ($n = 19$), $F(1, 195) = 5.67$, $p = .018$, $\eta_p^2 = .028$. Controlling for the number of days a month typically consume alcohol on in the analyses did not change the pattern of results, therefore, for clarity, results are reported without controlling for this. Chi-square analyses revealed no

association between conditions in terms of gender, $\chi^2(1, N = 196) = 0.40$, $p = .528$, whether participants were a student or not, $\chi^2(1, N = 196) = 0.96$, $p = .327$, whether they had previously heard about Dry January, $\chi^2(1, N = 196) = 0.40$, $p = .528$, had taken part in Dry January previously, $\chi^2(1, N = 196) = 0.12$, $p = .725$, previously completed one month alcohol-free, $\chi^2(1, N = 196) = 0.96$, $p = .327$, or condition, $\chi^2(1, N = 196) = 1.29$, $p = .256$.

Preliminary analyses were conducted to explore whether there were any differences between conditions on any measures assessed pre-manipulation. Specifically, one-way ANOVAs (control, self-affirmation) revealed no differences between conditions in terms of age, $F(1, 195) = 0.00$, $p = .952$, $\eta_p^2 = .000$, systematic processing, $F(1, 195) = 0.20$, $p = .652$, $\eta_p^2 = .001$, baseline attitude, $F(1, 195) = 0.40$, $p = .529$, $\eta_p^2 = .002$, baseline DRSE, $F(1, 195) = 0.03$, $p = .860$, $\eta_p^2 = .000$, $\eta_p^2 = .000$, age when they first started drinking alcohol, $F(1, 195) = 2.34$, $p = .127$, $\eta_p^2 = .012$, number of days a month typically consume alcohol on, $F(1, 195) = 0.42$, $p = .516$, $\eta_p^2 = .002$, number of drinks typically consumed each day drinking alcohol, $F(1, 195) = 0.82$, $p = .365$, $\eta_p^2 = .004$, or AUDIT score, $F(1, 195) = 0.00$, $p = .959$, $\eta_p^2 = .000$. Chi-square analyses revealed no association between conditions in terms of gender, $\chi^2(1, N = 196) = 0.16$, $p = .692$, whether participants were a student or not, $\chi^2(1, N = 196) = 2.13$, $p = .145$, whether they had previously heard about Dry January, $\chi^2(1, N = 196) = 0.16$, $p = .692$, had taken part in Dry January previously, $\chi^2(1, N = 196) = 0.72$, $p = .397$, or had previously completed one month alcohol-free, $\chi^2(1, N = 196) = 0.50$, $p = .480$.

As expected, one-way ANOVA (control, self-affirmation) revealed a significant main effect of condition on the values importance measure, $F(1, 193) = 476.72$, $p < .001$, $\eta_p^2 = 710$: the value selected was more important to participants in the self-

affirmation ($M = 6.34$, $SD = 1.15$) than to those in the control condition ($M = 2.39$, $SD = 1.39$). Additionally, one-way ANOVA showed a significant main effect of self-affirmation condition on the manipulation check measure, $F(1, 193) = 15.42$, $p < .001$, $\eta_p^2 = .074$: participants scored higher on this measure in the experimental condition ($M = 4.52$, $SD = 1.71$) than the control condition ($M = 3.58$, $SD = 1.58$).

Main Analyses

Mean scores on all of the dependent variables by condition are given in Table 35 and correlations between dependent variables are reported in Appendix D.

Effects of self-affirmation and systematic processing on dependent variables assessed immediately post-manipulation. A series of hierarchical regression analyses was conducted to (i) test the hypothesis that self-affirmation would have a main effect on each measure of open-minded responding to the health information and cognitions indicative of motivation to change behaviour and (ii) explore whether systematic processing moderated any impact of self-affirmation for each dependent variable. For each analysis, condition was dummy coded so that it compared the affirmation condition (1) to the control condition (0). Condition was entered as a predictor at step 1, mean-centred systematic processing scores were entered at step 2, and the interaction term between condition and mean-centred systematic processing was entered at step 3. Resultant analyses are reported in Table 36 - 38. Significant interactions were decomposed using simple slopes analyses (Aiken & West, 1991) in which the dependent variable was regressed onto condition for those with low (1 SD below the mean), mean and high (1 SD above the mean) systematic processing scores. Analyses are only described in text if they indicated either a significant main effect of self-affirmation or a significant self-affirmation and systematic processing interaction.

Table 35

Means (and SDs) for all Dependent Variables

	Control	Self-affirmation
Indices of open-minded responding		
Message derogation	3.94 (1.38)	3.83 (1.61)
Depth of thought	3.15 (1.33)	2.79 (1.20)
Negative affect	2.11 (1.44)	2.04 (1.45)
Cognitions indicative of motivation to change behaviour		
Intention	3.03 (1.84)	3.09 (2.00)
Identity	2.85 (1.49)	3.01 (1.68)
Anticipated regret	1.84 (1.34)	2.12 (1.68)
Attitude	4.05 (1.02)	3.85 (0.93)
Plans for January	2.66 (0.73)	2.57 (0.72)
Response efficacy	3.73 (1.61)	4.20 (1.65)
Self-efficacy	5.37 (1.75)	5.15 (1.84)
Coping efficacy	5.43 (1.73)	5.48 (1.60)
Information request	2.36 (1.71)	2.34 (1.81)
Follow-up measures		
Alcohol in January (days)	6.51 (5.96)	7.49 (6.60)
DRSE	5.61 (1.01)	5.59 (1.08)

Main effects of self-affirmation. There was a main effect of self-affirmation (entered at step 1) on message derogation (β = -0.14, p = .050); participants in the self-affirmation condition reported lower levels of message derogation towards the Dry January materials compared to those in the control condition.

Moderation by systematic processing.

Negative affect. Systematic processing moderated the impact of self-affirmation on negative affect as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model, $\Delta F(1, 193) = 9.36$, $p = .003$, $\Delta R^2 = .046$. Simple slopes analysis revealed that there was a significant effect of self-affirmation on negative affect when systematic processing was low, $\beta = -.24$, $t(196) = -2.37$, $p = .019$ (Figure 21), with those in the self-affirmation condition reporting lower negative affect compared to those in the control condition. There was no impact of the self-affirmation manipulation on negative affect for those with mean levels of systematic processing, $\beta = -.02$, $t(196) = -0.81$, $p = .776$; however, for those high in systematic processing there was a marginal impact of self-affirmation, $\beta = .20$, $t(196) = 1.96$, $p = .051$, such that participants in the self-affirmation condition reported higher levels of negative affect than those in the control condition.

Anticipated regret. Systematic processing moderated the impact of self-affirmation on anticipated regret as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model, $\Delta F(1, 191) = 7.17$, $p = .008$, $\Delta R^2 = .035$. Simple slopes analysis revealed that there was a significant effect of self-affirmation on anticipated regret when systematic processing was high, $\beta = .28$, $t(196) = 2.80$, $p = .006$, with those in the self-affirmation condition reporting greater levels of anticipated regret compared to those in the control condition. (Figure 22). There was no impact of self-affirmation for participants with low, $\beta = -.10$, $t(196) = -1.03$, $p = .307$, or mean levels of systematic processing, $\beta = .09$, $t(194) = 1.24$, $p = .217$.
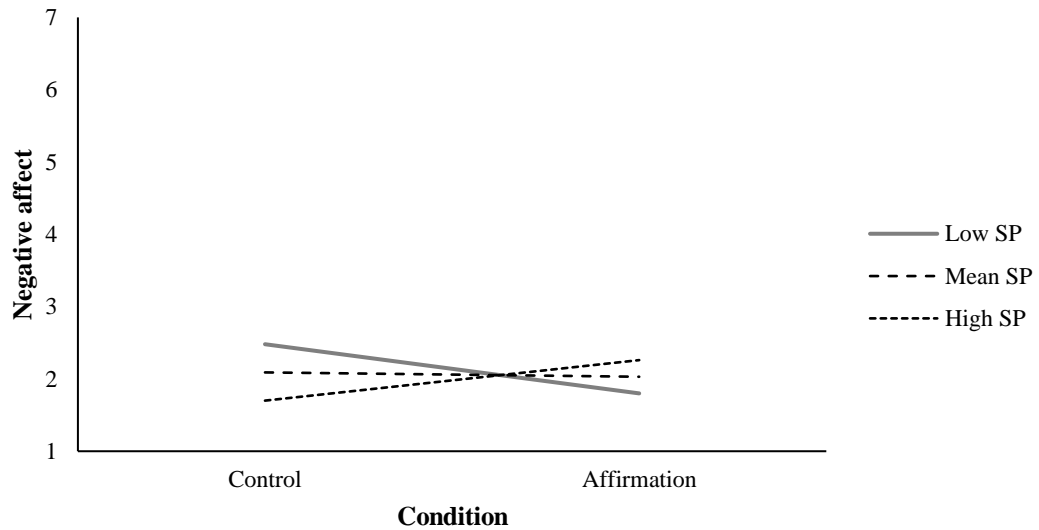
Figure 21. Negative affect regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).
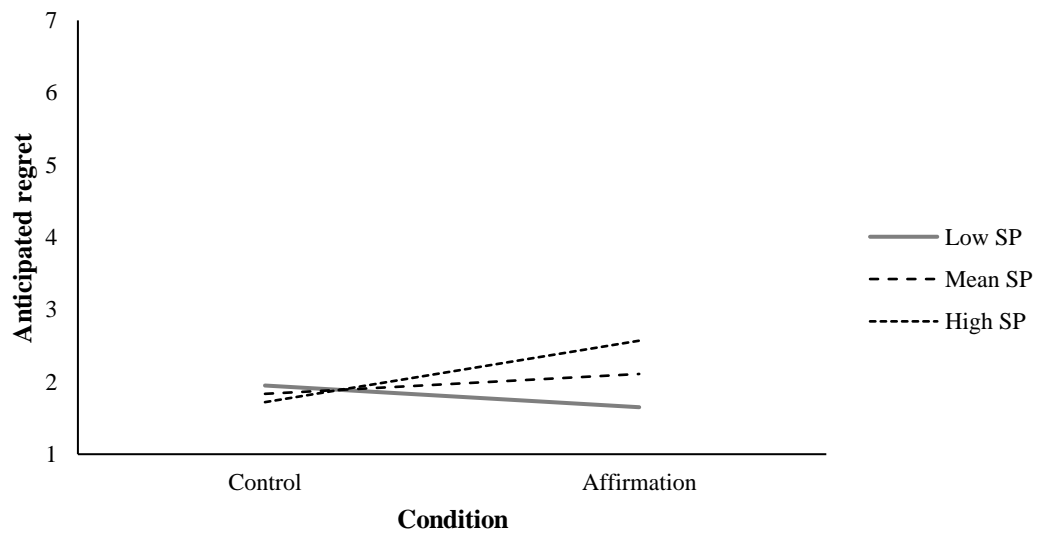
Figure 22. Anticipated regret regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

Attitudes. Systematic processing moderated the impact of self-affirmation on attitudes towards consuming alcohol as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model, $\Delta F(1, 191) = 7.02$, $p = .009$, $\Delta R^2 = .034$. Simple slopes analysis revealed that there was

a significant effect of self-affirmation on attitudes when systematic processing was low,

$\beta = -.30$, $t(196) = -2.98$, $p = .003$ (Figure 23), with those in the self-affirmation

condition reporting less positive attitudes compared to those in the control condition.

There was no impact of the self-affirmation manipulation on attitudes for those with

mean, $\beta = -.11$, $t(196) = -1.59$, $p = .114$, or high levels of systematic processing, $\beta = .08$,

$t(196) = 0.78$, $p = .439$.
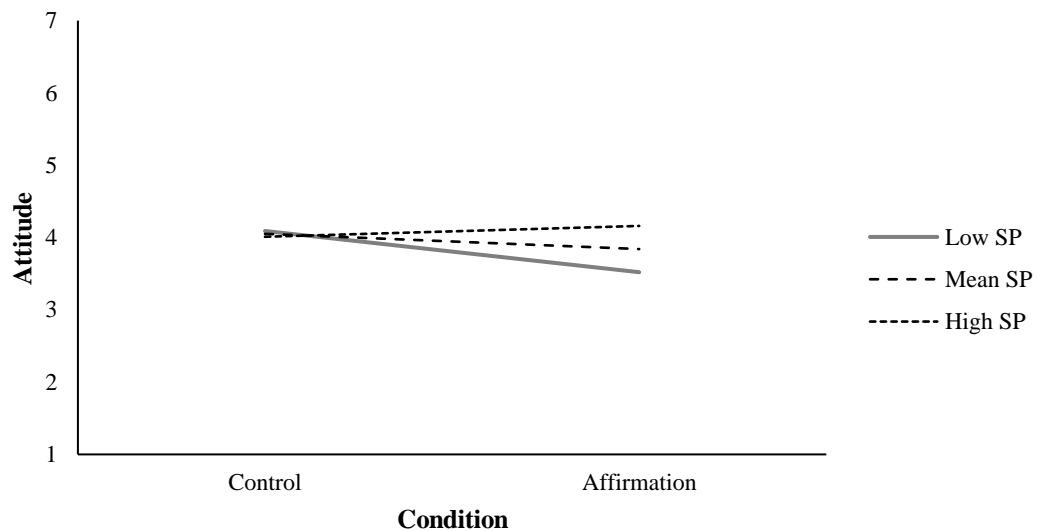
Figure 23. Attitude regressed onto condition for individuals with low, mean and high

levels of systematic processing (SP).

Coping efficacy. Systematic processing moderated the impact of self-affirmation

on coping efficacy as evidenced by the fact that the interaction term (entered at step 3)

significantly increased the variance accounted for by the model, $\Delta F(1, 192) = 4.28$, p

$= .040$, $\Delta R^2 = .021$. However, simple slopes analyses revealed that self-affirmation did

not significantly impact perceptions of coping efficacy at low, $\beta = .15$, $t(195) = 1.51$, p

$= .132$, mean, $\beta = .01$, $t(195) = 0.07$, $p = .941$, or high levels of systematic processing, β

$= -.14$, $t(195) = -1.42$, $p = .158$ (Figure 24).
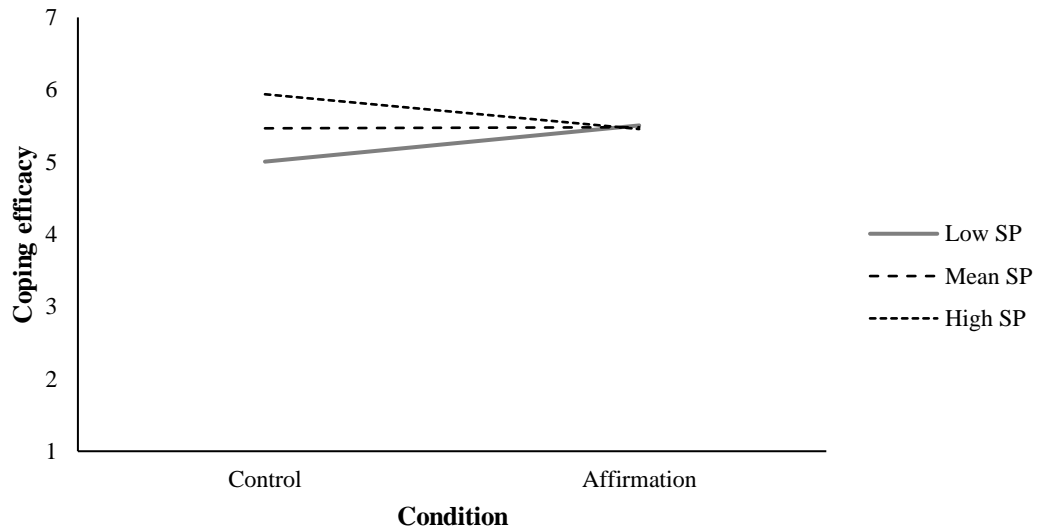
Figure 24. Coping efficacy regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

    Effect of self-affirmation and systematic processing on measures at follow-up.
In all analyses reported in this section, condition was dummy coded (control = 0, self-affirmation =1) and systematic processing was mean centred. In order to determine whether or not participants participated in Dry January (coded; 0 = not participated in Dry January, 1 = participated in Dry January) a hierarchical multiple logistic regression analysis was conducted. Condition did not explain a significant proportion of the variance in Dry January participation, Model χ^2 (1, $N = 171$) = 0.02, $p = .892$, Nagelkerke $R^2 = .000$. At step 2, the addition of systematic processing failed to significantly improve the fit of the model, Step χ^2 (1, $N = 171$) = 0.16, $p = .693$. At step 3, the interaction between condition and systematic processing also failed to significantly improve the fit of the model, Step χ^2 (1, $N = 171$) = 1.89, $p = .169$.

Table 36

Summary of Hierarchical Multiple Regression Analyses Predicting Indicators of Open-Minded Responding to the Health Information Message

Variables entered	Depth of thought			Message derogation			Negative affect		
	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	-.03	-.03	-.03	-.14*	-.14†	-.14†	-.02	-.02	-.02
Systematic processing		.24**	.19†		-.13†	-.11		-.06	-.27**
Condition X Systematic processing			.08			-.02			.03**
R^2	.001	.059	.062	.019	.036	.036	.00	.004	.050
Model F	0.13	6.09**	4.26**	3.88*	3.58*	2.40†	0.09	0.37	3.38*
ΔR^2		.058	.003		.016	.000		003	.046
ΔF		12.05**	0.62		3.26†	0.06		0.64	9.36**

$^\dagger p < .10, *p <. 05, ** p < .01$

Table 37

Summary of Hierarchical Multiple Regression Analyses Predicting Cognitions Indicative of Motivation to Change Behaviour (Part 1)

Variables entered	Intention			Identity			Attitude			Anticipated regret			Plans for January		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.02	.01	.01	.05	.05	.05	-.10	-.11	-.11	.09	.09	.09	-.06	-.07	-.07
Systematic processing		.16*	.09		.13	.04		.15*	-.04		.11	-.08		.08	-.01
Condition X Systematic processing						.12			.26**			-.27**			.12
R^2	.00	.026	.031	.003	.019	.026	.011	.032	.066	.009	.022	.057	.004	.011	.019
Model F	0.05	2.51†	2.03	0.49	1.87	1.71	2.09	3.13*	4.50**	1.64	2.12	3.85*	0.85	1.09	1.21
ΔR^2		.025	.005		.017	.007		.021	.033		.013	.035		.007	.007
ΔF		4.98*	1.06		3.24†	1.38		4.14*	7.02**		2.54	7.17**		1.33	1.45

†$p < .10$, *$p < .05$, ** $p < .01$

Table 38

Summary of Hierarchical Multiple Regression Analyses Predicting Cognitions Indicative of Motivation to Change Behaviour (Part 2)

Variables entered	Response efficacy			Self-efficacy			Coping efficacy			Information request		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.13†	.14†	.14†	-.06	-.06	-.06	.01	.00	.01	-.01	-.01	-.01
Systematic processing		-.09	-.03		.06	.16		.11†	.28**		.18**	.07
Condition X Systematic processing			-.09			-.16			-.21*			.17†
R^2	.017	.026	.030	.004	.007	.019	.000	.018	.039	.000	.034	.048
Model F	3.47†	2.59†	1.98	0.70	0.70	1.26	0.02	1.74	2.60†	0.01	3.40*	3.22*
ΔR^2		.009	.004		.004	.012		.018	.021		.034	.014
ΔF		1.71	0.74		0.70	2.38		3.42†	4.28*		6.79**	2.80†

$^\dagger p < .10, *p <. 05, ** p < .01$

A hierarchical regression analysis was conducted to explore whether self-affirmation condition and systematic processing would predict the number of days on which participants reported consuming alcohol during January. Condition entered at step 1, $F(1, 172) = 1.05$, $p = .306$, $R^2 = .006$, systematic processing entered at step 2, $\Delta F(1, 171) = 0.66$, $p = .417$, $\Delta R^2 = .004$, and the interaction between condition and mean-centred systematic processing entered at step 3, $\Delta F(1, 170) = 0.02$, $p = .899$, $\Delta R^2 = .000$, all failed to explain a significant proportion of the variance in the number of days participants reported consuming alcohol during January.

Finally, a hierarchical regression analysis was conducted to explore whether self-affirmation condition and systematic processing would predict follow-up DRSE. First, baseline DRSE was controlled for by entering it at step 1, $F(1, 171) = 197.25$, $p < .001$, $R^2 = .536$. Condition entered at step 2, $F(1, 170) = 0.04$, $p = .843$, $R^2 = .000$, systematic processing entered at step 3, $\Delta F(1, 169) = 0.07$, $p = .791$, $\Delta R^2 = .000$, and the interaction between condition and mean-centred systematic processing entered at step 4, $\Delta F(1, 168) = 0.52$, $p = .474$, $\Delta R^2 = .000$, all failed to significantly improve the fit of the model.

Discussion

The findings of the present research provided some limited support for the hypothesis that self-affirmation would promote more open-minded responding towards the Dry January materials. Specifically, self-affirmed participants reported lower levels of message derogation towards the Dry January materials in comparison to their non-affirmed counterparts. However, this finding needs to be interpreted with caution given that it only held for one of the dependent variables tested. Furthermore, there was no evidence of any significant main effect of self-affirmation on cognitions indicative of

motivation to change behaviour or any indicator of behaviour change, including participation in Dry January.

It is notable that participants' scores on overall indicators of open-minded responding and cognitions indicative of motivation to change behaviour were relatively low and were often below the scale mid-point. One explanation for this relates to the content of the Dry January materials. As described in the 'Introduction' section, the Dry January materials used in this study were high in self-efficacy. However, they were also relatively absent of threat – they did not explicitly inform the participants of the health-detrimental consequences of their current alcohol consumption – meaning that it is questionable whether the materials presented a threat to self-integrity. In the absence of a threat to self-integrity, there may be little defensiveness for the self-affirmation manipulation to overcome. In this instance, therefore, there may be little benefit to accrue from self-affirming. Given this, it would seem important for future research to continue to explore how specific message features, such as an absence of physical or direct self-threat, may impact the effectiveness of a self-affirmation manipulation.

An alternative explanation relates to the low salience of the health threat when the self-affirmation manipulation was completed. Previous theorising suggests that the situation in which the self-affirmation manipulation is completed can affect the salience of both the threat (Steele, 1988) and a particular self-identity (Sherman & Cohen, 2006), meaning that in this study, competing the self-affirmation manipulation in the December 'festive' season may have decreased the salience not only the of the benefits of Dry January, but also of any 'healthy' identity. Indeed, Steele (1988) argues that risks of the targeted health behaviour – or, in this case, benefits associated with cessation – must be salient to individuals at the time of manipulation for self-affirmation to exert desired effects. It would be worthwhile investigating in which situations completing a

self-affirmation manipulation is most conducive to promoting behaviour change, especially as most information is generally provided to people in situations where the health threat is not salient (e.g., online).

Furthermore, the present study revealed no significant main effects of the self-affirmation manipulation on participation in Dry January or on the number of alcohol-free days that participants reported having in January. Again, it is possible that that there was little defensiveness elicited by the Dry January materials for self-affirmation to overcome. One alternative explanation, however, is that the follow-up period was relatively long and it may therefore be unrealistic to expect self-affirmation to exert effects over such a long time (but see Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski, 2009; Sherman et al., 2013). In the present study, participants completed the self-affirmation manipulation (or control equivalent) once in December, yet the behaviour – taking part in Dry January – was not due to be enacted until January. Indeed, studies that have evidenced effects of self-affirmation on alcohol consumption have typically assessed alcohol consumption either at the time of the study (Armitage & Arden, 2016) or after a relatively short follow-up period (Armitage & Rowe, 2011; Scott et al., 2013). Other applications of self-affirmation to alcohol consumption have similarly failed to demonstrate effects of self-affirmation on alcohol consumption even when the impact of self-affirmation on cognitions immediately after the manipulation was positive (e.g., Harris & Napper, 2005).

Given the above, it may be profitable for future research to consider how self-affirmation manipulations can be incorporated into campaigns such as Dry January to support behavioural changes that do not start immediately, for example by embedding self-affirmation within materials across different platforms (e.g., promotional materials, social media, or text messaging) or self-affirming people at multiple time points (e.g.,

Falk et al., 2015). Alternatively, perhaps, any initial effectiveness of the self-affirmation manipulation at increasing open-minded responding could be combined with other types of interventions to support people to achieve their behaviour goals, such as implementation intentions and planning interventions (Hagger et al., 2016). However, it is noteworthy that research findings regarding the efficacy of combining self-affirmation with planning interventions to date are mixed (Armitage & Arden, 2016; Harris et al., 2014; Jessop, Sparks, Buckland, Harris, & Churchill, 2014; Norman & Wrona-Clarke, 2016).

The present research revealed some evidence that the impact of self-affirmation on outcomes was moderation by systematic processing. Specifically, the findings suggested that the self-affirmation manipulation appeared to be most effective for those high in systematic processing and the least effective for those low in systematic processing. Indeed, the current research findings provided some extension to previous research showing that self-affirmation does not have general effects across people (Düring & Jessop, 2015; Harris & Epton, 2009; Napper et al., 2009).

In explanation of these findings, it is possible that self-affirmation increased critical scrutiny of the Dry January materials (Correll, Spencer, & Zanna, 2004; Klein, Harris, Ferrer, & Zajac, 2011), which could explain the differing effects for individuals with different tendencies to process information systematically. It is possible in the current study that self-affirming individuals low in systematic processing boosted their ability to systematically process health information, which therefore resulted in them perceiving the Dry January materials as weak so they were unpersuaded of their need to participate. This is generally supportive of the findings from previous research (Chapter 2, this thesis), which found that self-affirming individuals low in systematic processing promoted less open-minded responses to a narrative leaflet. While the Dry January

materials were not solely narrative, they were very low in threat such that the narrative component may have been the most salient aspect. Speculatively, it is possible that the self-affirmation manipulation made individuals high in processing more open to information presented in a format that they may generally be less open to (see Kahlor, Dunwoody, Griffin, Neuwirth, & Giese, 2003). Indeed, whether self-affirmation manipulations are more (or less) effective for different individuals represents an area that merits further investigation.

Nonetheless, the findings of the present research contribute to the growing body of research exploring the application of self-affirmation manipulations in health-related contexts. The present study was the first to explore the effectiveness of a self-affirmation manipulation on outcomes when presented in combination with existing health promotion materials encouraging participation with a real-world health promotion event. Indeed, as one benefit of self-affirmation interventions is that it can be used alongside existing materials (Harris & Epton, 2009), there is much scope for more research extending the repertoire of self-affirmation applications to existing health promotion campaigns.

This study has some limitations to acknowledge. Firstly, participation was through self-selection; arguably, people may have been more inclined to take part if they were already engaged with the topic issue or had prior knowledge about Dry January. Secondly, while this study aimed to recruit members of the general public, students were over-represented in the current sample. Indeed, the majority of self-affirmation studies rely solely on students participating for course credits (Harris & Epton, 2009), so it is positive that this study does not rely solely on a student sample. Future research would benefit from recruiting participants more representative of the general population.

In summary, the present research is the first study to combine a self-affirmation manipulation with real-world health promotion materials to encourage people to take part in a discrete health promotion event. Critically, the current findings provide very limited support for the suggestion that self-affirmation might impact upon the efficacy of Dry January materials. Future research should continue to explore the efficacy of self-affirmation in combination with existing health promotion materials and campaigns and consider the possibility that effects may not be uniform across recipients.

CHAPTER 6: General Discussion

Overview of General Discussion

This thesis presented research studies in four empirical chapters that examined, firstly, the impact of self-affirmation used in combination with personally relevant health information presented in narrative format on open-minded responding, cognitions indicative of motivations to change behaviour and health behaviour change, and, secondly, explored the moderating role of systematic processing.

This final chapter will give a brief restatement of the background literature and research aims of the current programme of research. The findings from each empirical chapter will be summarised, followed by a consideration of the theoretical and practical implications of this body of work. Limitations of the current programme of research, as well as directions for future work, will then be outlined.

Restatement of Background Issues and Research Aims

Restatement of the Background Literature

It has been estimated that improving six health behaviours could prevent more than 37 million premature deaths worldwide over the next 15 years (Kontis et al., 2014). However, encouraging people to adopt healthier lifestyles is beset with many challenges, not least defensive processing in the target audience (van 't Riet & Ruiter, 2013). Such resistance can be a significant early barrier to commencing the change process (e.g., Keller, 1999) so finding and developing techniques to reduce resistance is a priority, as few are available (Rothman & Salovey, 2007). Considerable research has shown the potential for self-affirmation to reduce defensiveness, through encouraging greater open-minded responding to personally relevant health information, more positive cognitions indicative of motivations to change behaviour and, ultimately, behaviour change (for reviews and meta-analyses see Epton, Harris, Kane, van

Koningsbruggen, & Sheeran, 2015; Harris & Epton, 2009, 2010; Sweeney & Moyer, 2015).

To date, however, studies of self-affirmation have employed a limited format of health-risk materials, focusing primarily on information that is text-based, static, impersonal, and that often conveys numerical risk, meaning that the positive effects of self-affirmation may potentially be limited to such information. One alternative way of presenting health information is as a narrative, which is thought to elicit less defensive processing through being engaging (e.g., de Wit, Das, & Vet, 2008; Green & Brock, 2000). Narratives comprise an important component of health-related information that people may encounter or seek in their everyday lives (Ziebland & Wyke, 2012). Despite this, whether self-affirmation can enhance the ability of such messages to promote behaviour change has yet to be established. Furthermore, there has been little consideration of potential moderators of self-affirmation effects. In particular, while there is evidence that self-affirmation increases careful scrutiny of health information (Correll, Spencer, & Zanna, 2004; Klein, Harris, Ferrer, & Zajac, 2011), there has been no research exploring how individual differences in the systematic processing of health information might moderate the effectiveness of self-affirmation on outcomes.

Restatement of the Research Aims

There were two broad aims of the current programme of research. The first aim was to explore the impact of self-affirmation used in combination with personally relevant health information presented in narrative format on open-minded responding, cognitions indicative of motivations to change behaviour and health behaviour change. Specifically, the narrative formats used in the current thesis comprised a text-based narrative detailing the link between alcohol consumption and breast cancer (Chapter 2), a video narrative linking alcohol consumption to liver disease (Chapter 3), a graphic

narrative outlining the benefits of exercise (Chapter 4), and a text-based narrative used in the health promotion campaign, Dry January (Chapter 5). The second aim was to explore whether individual differences in systematic processing would moderate the effects of self-affirmation on the aforementioned outcomes.

Summary of the Findings in the Current Research Programme

Chapter 2: Exploring Whether the Effects of Self-Affirmation On Narrative Health Information Are Moderated by Systematic Processing.

In two studies, the first empirical chapter (Chapter 2) explored the impact of self-affirmation on open-minded responding, cognitions indicative of motivations to change behaviour and health behaviour change. In both studies, the health information used alongside the self-affirmation was a text-based narrative that linked alcohol consumption to breast cancer using the format of a leaflet, presented online. The potential moderating role of systematic processing was also explored.

In the first study, self-affirmation increased open-minded responding (promoting lower levels of message derogation and counter-arguing) to the narrative leaflet. There was also evidence of moderation by systematic processing: self-affirmed low systematic processors reported consuming significantly less alcohol at follow-up, despite initially displaying less open-minded responding (lower risk perceptions).

In the second study, self-affirmation once again increased open-minded responding (lower levels of counter-arguing) to the same narrative leaflet but also reduced readiness to change (promoting weaker intentions, less positive attitudes and lower identity to reduce alcohol consumption). Moderation analyses showed that self-affirmed low systematic processors displayed less open-minded responding (lower personal relevance and negative affect) and a trend towards lower engagement (lower attention and less perspective taking) with the narrative.

Table 39

Summary of Findings in Relation to the Two Over-Arching Research Aims of the Current Thesis

Chapter	Evidence of main effects?	Evidence of moderation effects?	
		Low systematic processors	High systematic processors
Chapter 2 (Narrative text regarding alcohol consumption)	**Yes – SA increases openness (Study 1 & 2) and reduces motivation (Study 2)** Study 1: SA reduces message derogation and counter-arguing Study 2: SA reduces counter-arguing, lowers intentions, less positive attitude and weaker identity	**Yes – SA lowers openness (Study 1 & 2), increases behaviour change (study 1 only)** Study 1: SA lowers risk Study 2: SA lowers risk, relevance and negative affect	No
Chapter 3 (Narrative video regarding alcohol consumption)	**Yes – SA increases openness, motivation, engagement and behaviour change** SA increases negative affect, anticipated regret, positive attitudes, visualisation, and emotion	No	No
Chapter 4 (Graphic narrative regarding exercise)	No	**Yes – SA increases openness and motivation (at follow-up)** SA increases personal relevance, action control and plans	**Yes – SA reduces openness, reduces exercise at follow-up, and has mixed impaction on motivation (at follow-up)** SA increases reactance, lower intentions and greater coping efficacy
Chapter 5 (mixed narrative text regarding Dry January)	**Yes – SA increases openness** SA lowers message derogation	**Yes – SA lowers openness and motivation** SA lowers negative affect and less positive attitudes	**Yes - SA Increases motivation** SA increases anticipated regret

Note: Bold denotes the overall impact of SA on sets of variables, not bold denotes specific effect of SA on reported variables, *SA* refers to self-affirmation, *Openness* refers to indices of open-minded responding, *motivation* refers to cognition indicative of motivation to change behaviour.

Chapter 3: Experimentally Manipulated Self-Affirmation Promotes Reduced Alcohol Consumption in Response to Narrative Information

The study presented in the second empirical chapter (Chapter 3) explored the impact of self-affirmation used in combination with a narrative video outlining the link between alcohol consumption and liver disease. Results showed that self-affirmed participants reported consuming significantly less alcohol at follow-up than at baseline. There was no difference in alcohol consumption for participants in the control condition. Self-affirmed participants also engaged in more open-minded responding (e.g., evidence of more message acceptance) to, and greater engagement with, the narrative health information. Furthermore, the impact of self-affirmation on open-minded responding was mediated by narrative engagement, such that self-affirming increased narrative engagement which, in turn, promoted greater open-minded responding to the narrative video. This study also explored whether systematic processing would moderate the impact of self-affirmation on these effects; however, there was no evidence of such moderation.

Chapter 4: Exploring Novel Ways of Presenting Health Information: Testing the Effectiveness of a Graphic Comic-Style Message and the Impact of Self-Affirmation on Systematic Processing.

The first study presented in the third empirical chapter (Chapter 4) investigated whether a graphic narrative about the benefits of exercise was any more effective in changing outcomes than a non-narrative version of the same information. Systematic processing was explored as a moderator of these effects. The results showed that the graphic narrative format was no more effective than a traditional format at promoting positive outcomes. However, there was some limited evidence that systematic processing moderated the impact of information type on perceived risk, such that

individuals low in systematic processing showed a trend towards reporting greater levels of risk when presented with information in the graphic narrative format compared to the non-graphic format.

The second study in this third empirical chapter tested whether self-affirmation would enhance the efficacy of the same graphic narrative used in the first study reported in this chapter. Once again, the opportunity was taken to explore the role of systematic processing. There was no overall benefit of completing a self-affirmation manipulation, in that there were no significant main effects of self-affirmation on any outcome measure. However, there was some evidence that systematic processing moderated the impact of self-affirmation. Specifically, self-affirmation produced greater openness (increasing perceptions of personal relevance) to the graphic narrative among low systematic processors immediately post-manipulation and, at 7-day follow-up, low systematic processors also reported more positive cognitions indicative of motivations to change behaviour (greater reported action control and action plans). On the other hand, for those high in systematic processing, self-affirmation resulted in more state reactance to the graphic narrative immediately post-manipulation. Furthermore, at 7-day follow-up, self-affirmed high systematic processing participants reported exercising on fewer days than those in the control condition. There were mixed results for cognitions indicative of motivations to change behaviour assessed at follow-up for high systematic processors (who reported lower intentions to exercise and greater perceptions of coping efficacy).

Chapter 5: Exploring the Impact of Self-Affirmation and Systematic Processing on Responses to the "Dry January" Health Campaign.

Dry January is a nation-wide health promotion event encouraging alcohol abstinence throughout January. The final empirical chapter (Chapter 5) of this thesis

explored whether self-affirmation could enhance the efficacy of Dry January materials to promote greater levels of open-minded responding and more positive cognitions indicative of motivations to change behaviour (assessed immediately post-manipulation). Whether participants had taken part in Dry January was assessed at the start of February, after the Dry January event had finished. This study also explored whether systematic processing would moderate any effects of self-affirmation on outcomes. Results showed some limited evidence that self-affirmation resulted in greater open-minded responding to the Dry January campaign materials immediately post-manipulation (reducing message derogation). There was also some evidence that systematic processing moderated the impact of self-affirmation, such that self-affirming those low in systematic processing resulted in less open-minded responding (lower reported negative affect) and positive cognitions indicative of motivations to change behaviour (less positive reported attitudes), whereas self-affirmation among individuals high in systematic processing resulted in greater cognitions indicative of motivations to change behaviour (greater reported anticipated regret).

Theoretical and Practical Implications of the Findings

The research summarised in the previous section contains a number of theoretical and practical implications for self-affirmation research in the health domain. In this following section, the theoretical implications for the self-affirmation literature concerning, firstly, the use of narrative health information alongside a self-affirmation manipulation and, secondly, the moderating role of systematic processing on the impact of self-affirmation on outcomes, are considered. The practical implications related to ongoing self-affirmation research and the wider health promotion context will be discussed in turn for each of these two areas.

The Impact of Self-Affirmation used in Combination with Information Presented in a Narrative Format

The findings of the current thesis provide some evidence that self-affirmation can be successfully used in combination with some formats of narrative information. Overall, there was evidence of greater open-minded responding to narrative texts (Chapter 2, Study 1 and 2; Chapter 5) and a video (Chapter 3) when self-affirmed. However, the evidence regarding the efficacy of self-affirmation and narrative health information to promote more positive cognitions indicative of motivations to change behaviour was mixed: there was no evidence of self-affirmation affecting these outcomes when presented with a narrative text in two empirical studies (Chapter 2, Study 1; Chapter 5) or graphic narrative in one study (Chapter 4, Study 2), whereas the findings of other empirical studies found negative (Chapter 2, Study 2) and positive effects (Chapter 3) of self-affirmation on a narrative video and text respectively. In relation to behaviour change, one study showed that self-affirmed participants when presented with a narrative video reduced their alcohol consumption at 7-day follow-up compared to baseline (Chapter 3). In sum, the research in this thesis provides some evidence that self-affirmation can promote more open-minded responding to narrative information, as well as some evidence of behaviour change, but the effects of self-affirmation on outcomes were not uniform and consistent across the empirical studies.

Theoretical implications of the research findings for self-affirmation. The research findings reported in Chapters 2, 3 and 5 are broadly consistent with the findings of Sherman, Nelson and Steele (2000, Study 2) in suggesting that self-affirmation may be useful in promoting greater open-minded responding to narrative information. It is notable that self-affirmation made some difference to indices of open-minded responding despite the possibility that systematic processing induced by self-affirmation (cf. Correll et al., 2004; Klein et al., 2011) could have reduced the persuasiveness of such case-based, narrative information or that people may initially be

less defensive to narrative health information (de Wit et al., 2008), meaning there would be less resistance for self-affirmation to ameliorate. Given this, future research should explore the mechanisms underlying the impact of self-affirmation on open-minded responding to health information, for example, by investigating whether self-affirmation primarily serves to reduce defensiveness, as has been hypothesised (e.g., Harris & Napper, 2009).

The findings regarding the impact of self-affirmation and narrative health information on cognitions indicative of motivations to change behaviour were mixed, with self-affirmation exerting some positive effects when combined with a narrative video (Chapter 3), and some negative effects when combined with a narrative text (Chapter 2; Study 2). In addition, there was evidence that self-affirmation had no impact on cognitions indicative of motivations to change behaviour in three studies presented in this thesis (Chapter 2; Study 1; Chapter 4, Study 2; Chapter 5). Taken together, it is possible that self-affirmation may exert different effects across stages of behaviour change – represented in the current thesis as different sets of dependent variables – in response to narrative health information. For example, self-affirmation may result in greater reported openness to the narrative, but this reduced defensiveness may not necessarily translate into promoting more positive cognitions indicative of motivations to change behaviour, then into behaviour change. In their meta-analysis, Sweeney and Moyer (2015) reported that intentions did not predict behaviour change, suggesting that groups of variables may not necessarily be interconnected. As such, this represents an interesting area for future research.

However, with the exception of reports of reduced message derogation (Chapter 2, Study 1; Chapter 5) and counter-arguing (Chapter 2; Study 1 and 2), the impact of self-affirmation on specific dependent variables was not uniform or consistent across

the empirical studies and often was apparent only on a few variables. For example, the impact of self-affirmation on negative affect was only evident in the study reported in Chapter 3 (see summary Table 39). It would be advisable, therefore, for future research to replicate the findings of this thesis before any firm conclusions are drawn about the effectiveness of using self-affirmation alongside narrative health information to promote positive outcomes.

The research findings of the study reported in Chapter 3 contribute to the body of literature suggesting that self-affirmation can encourage behaviour change (Armitage & Arden, 2016; Armitage, Harris, & Arden, 2011; Scott, Brown, Phair, Westland, & Schüz, 2013), even when presented with information in a narrative format. However, the main effect of self-affirmation on behaviour change was only evident in one of the studies in this thesis. One explanation for this relates to the differing contexts in which participants were self-affirmed, which may make certain identities more or less salient (Steele, 1988). As such, the studies that demonstrated no effect of self-affirmation in the current thesis were all completed online by participants in their own surroundings, for example in their own room in student halls, which may potentially have demonstrated to them the importance of that behaviour in forming their social identity. For example, it has been found that binge drinking is perceived to be a core part of the student identity (Carpenter et al., 2008; Colby, Colby, & Raymond, 2009), suggesting that self-affirming may have led people to value the social benefits of drinking more than the health benefits of reducing alcohol consumption. With a few exceptions (Harris & Napper, 2005; Meier et al., 2015), the majority of previous studies showing no effects of self-affirmation on alcohol consumption were conducted online, potentially in similar contexts (e.g., Epton et al., 2014; Knight & Norman, 2016; Norman & Wrona-Clarke,

2016). It is important for future research to test whether self-affirmation procedures can be used online to encourage changes in behaviour and whether context matters.

Collectively, the mixed impact of self-affirmation and narrative information on (i) specific dependent variables and (ii) sets of variables across the empirical chapters may be attributable to the format and presentation medium of the health information. As self-affirmation is believed to enable people to process health information more carefully and objectively rather than promote simple-minded acceptance of health information (Harris & Epton, 2009; Sherman, 2013; Sherman & Cohen, 2006), it is perhaps not surprising that the impact of self-affirmation combined with various narrative formats – potentially perceived as varying in quality and strength – differed across the empirical chapters. Indeed, the narratives used in the current thesis varied in content, form and context; future research should explore whether these narratives have an active ingredient in terms of their potential persuasive impact (for a review, see Graaf, Sanders, & Hoeken, 2016). That is, identification of which component parts of narratives make them persuasive, regardless of the medium they are presented in. Much of the heterogeneity in self-affirmation effects observed in the literature to date might be related to the differential features and formats of the health information employed (Epton et al., 2015) so it would seem important for future research to consider the impact of the information when interpreting the effect – or lack of effect – of self-affirmation on outcomes.

The findings of Chapter 3 contribute to our understanding of the mechanisms through which self-affirmation impacts upon message acceptance of narrative information. The current thesis suggests that self-affirmation increased message acceptance through the pathways that have been identified in research as the means by which narrative information proves persuasive: by raising engagement with the

information. Although only tested in one of the studies in the current thesis, it would be worthwhile for future research to explore whether this finding replicates across different types of narrative and, indeed, whether it translates to other forms of health information.

Practical implications of the research findings for self-affirmation theory.

From a research perspective, the current empirical findings highlight the important role of the health information presented alongside self-affirmation, suggesting that a standard values self-affirmation manipulation may not exert uniform effects across health information formats and mediums. It is therefore recommended that experimental tests of self-affirmation pay close attention to the format and features of the health information employed in their studies, in particular, by piloting and pre-testing information for persuasiveness and, at the very least, explicitly reporting or making available the health information used so that any effects can be interpreted with such information in mind.

From a health promotion perspective, narrative health information represents an important component of the information an individual may encounter or seek relevant to health behaviour change, both online (Ziebland & Wyke, 2012) and in real world health promotion materials (Khangura, Bennett, Stacey, & O'Connor, 2008). Accordingly, the finding here that self-affirmation can effectively be combined with a narrative video to promote health behaviour change (Chapter 2) is promising for health interventions. In particular, narratives may be especially effective for modelling decision making and behaviour change (Winterbottom, Bekker, Conner, & Mooney, 2008) and are more suitable for lower literacy audiences than non-narrative information (Murphy et al., 2015). However, as already noted, narratives can differ on a large number of dimensions so it would seem worthwhile to further explore the effects of self-affirmation when presented with different formats of health information before self-affirmation is

employed as a health promotion technique at the population level, especially given the negative or null effects found in some studies in the current thesis.

The Moderating Role of Systematic Processing on Self-Affirmation Effects

The studies reported in this thesis present some evidence that individual differences in systematic processing moderate the impact of self-affirmation on outcomes when participants are presented with some formats of narrative information. Most of the effects of self-affirmation obtained in this thesis were for individuals low in systematic processing: generally, self-affirming those low in systematic processing seemed to reduce open-minded responding and motivation to change when presented with narrative health information (Chapter 2, Study 1 and 2; Chapter 5). However, this pattern of results did not hold across all of the empirical chapters (see Summary Table 39). Self-affirming high systematic processors produced mixed effects; however, it is notable that effects were far fewer in number than those observed for low systematic processors (Chapter 4, Study 2, Chapter 5).

Theoretical implications of the research findings for self-affirmation. The findings of the current thesis build on the body of literature suggesting that self-affirmation may not exert uniform effects across people (e.g., Düring & Jessop, 2015; Ferrer et al., 2015). While research has explored the mediating role of critical scrutiny – akin to systematic processing – induced by self-affirmation (Correll et al., 2004; Klein et al., 2011), the findings of the presented thesis are the first to explore whether such systematic processing would moderate the impact of self-affirmation on outcomes. It is important to note, however, that the moderating impacts of systematic processing on self-affirmation in these studies were in relation to information presented as a narrative. Given this, it would be informative for future research to explore the moderating role of systematic processing on the impact of self-affirmation on outcomes when combined

with different formats of health information, including the traditional formats of health information typically used in the literature, or on pictorial health information (e.g., graphic warnings on cigarette packs), and across different behavioural domains.

The findings from the three studies reported in Chapter 2 and Chapter 5 indicate that self-affirming individuals low in systematic processing results in less positive responding to narrative health information, i.e., by promoting lower levels of open-minded responding. One potential explanation for this finding relates to the availability of self-resources (Sherman & Cohen, 2006). Arguably, the main goal of any self-affirmation manipulation is to provide an individual with the opportunity to reflect on their positive self-resources (Cohen & Sherman, 2014), so it is possible that individuals with fewer available resources (e.g., those with lower systematic processing) may benefit more from the enhanced perception of self-resources that self-affirming provides than do individuals with more self-resources (Sherman & Cohen, 2006). This boost in perceived self-resources may then, in turn, result in greater critical scrutiny of the narrative, resulting in lower reported open-minded responding if it is perceived as weak (cf. Correll et al., 2004). However, it is noteworthy that there was no evidence of moderation in Chapter 2 and the findings from Chapter 4 (Study 2) show the opposite pattern of results. Taken together, therefore, self-affirming low systematic processors produced some inconsistent results across the empirical studies. Future research would benefit from replicating the findings of this thesis, as well as exploring the mechanisms through which self-affirmation affects low systematic processors when presented with health information.

The evidence from the current programme of research regarding the impact of self-affirming individuals high in systematic processing was mixed. Specifically, in Chapter 5, self-affirming individuals high in systematic processing had a positive

impact on cognitions indicative of motivations to change behaviour, whereas in Chapter 4 (Study 2) self-affirmation had a negative impact on indices of open-minded responding and cognitions indicative of motivations to change behaviour for those high in systematic processing. Importantly, there was evidence of rebound effects on behaviour, such that self-affirming those high in systematic processing resulted in lower reported levels of exercise at 7-day follow-up compared to controls. One possible explanation for these mixed effects is that individuals higher in systematic processing – who by definition already show tendencies to process information more systematically – may not require an external manipulation to boost their self-resources. It is possible, therefore, that such individuals may respond to a self-affirmation manipulation by feeling overly confident (e.g., Briñol et al., 2007), which may result in them feeling less threatened by the information. Therefore, it is perhaps not surprising that the findings in thesis were mixed among those high in systematic processing. However, it is notable that there were relatively few effects for those high in systematic processing found across the empirical studies in this thesis; exploring how self-affirmation may impact upon this group represents an interesting area for future research.

The pattern of results for individuals low in systematic processing when self-affirmed is consistent across the thesis when the narrative was text-based information (Chapter 2 and 5). However, when the narrative was a video (Chapter 3) or predominantly images (Chapter 4, Study 2), the findings seemed to be more diverse. Speculatively, it is possible that the differences in the effects of systematic processing observed between the studies could be a related to the medium in which the narrative is presented. For example, as reading requires greater cognitive resources and active involvement, whereas watching a video only needs passive involvement (Shaffer, Owens, & Zikmund-Fisher, 2013), it is likely that individual differences in systematic

processing may be more relevant when health information is presented as narrative text. Alternatively, as text-based health information is arguably the more common medium used in health promotion, it is possible that participants would not have expected information to be presented in another medium. In such instances, systematic processing may be superseded by engagement, which may render individual differences in systematic processing less impactful. Future research would benefit from exploring the boundaries of the positive effects of self-affirming on responses to different mediums of presenting health information.

Practical implications of the research findings for self-affirmation. One goal of self-affirmation research in the health domain is to explore whether the manipulation can be successfully used in a health promotion context to encourage positive behaviour change. The findings of the current programme of research suggest that self-affirmation might be a useful tool for encouraging open-minded responding and more positive cognitions indicative of motivations to change behaviour, but these effects vary for different groups of people. For example, relative to controls, self-affirming individuals low in systematic processing resulted in lower reported alcohol consumption at 7-day follow-up (Chapter 2, Study 1), whereas self-affirming individuals high in systematic processing resulted in lower reported exercise at 7-day follow-up (Chapter 4, Study 2). In light of these potentially negative effects of self-affirmation for individuals high systematic processing, it is advisable for research to further explore the moderating effects of systematic processing before self-affirmation is employed as a health promotion technique at the population level.

From a health promotion perspective, that low systematic processors seemed to be less persuaded by narrative health information after a self-affirmation manipulation is not desirable, especially as narratives are a popular format of health information that

individuals search for online (Ziebland & Wyke, 2012). An important consideration is that outside of a research context, researchers may have little control over health information that people seek or encounter, which has implications for using self-affirmation at a population level. Nonetheless, the findings for those low in systematic processing when affirmed are, perhaps, positive from a health promotion perspective. Speculatively, people low in systematic processing might have lower levels of information sufficiency and be less considerate of source credibility, influencing the extent to which they seek out health-risk information and appraise the sources such information is from. As people are exposed to large quantities of health-related information of varying quality, it is perhaps informative that in the current thesis individuals low in systematic processing when affirmed seemed to be less open to information that may, arguably, be of lower quality than other commonly encountered formats of health information.

Limitations of the Current Research Programme

Although specific study limitations have been noted in each empirical chapter of this thesis, there are a number of over-arching limitations that should be acknowledged. This section, therefore, discusses the overall limitations to the current programme of research. These include a reliance on self-report measures, potential issues with the individual difference measure of systematic processing, the generalisability of the study samples, and consideration of statistical power.

Reliance on Self-Report Measures

One potential methodological limitation to this thesis is the reliance on self-report measures of alcohol consumption (Chapters 2, 3 and 5) and exercise (Chapter 4). Such measures may introduce self-presentation biases. However, research suggests that self-report measures can be a valid way of assessing both alcohol consumption (Babor,

Steinberg, Anton, & Del Boca, 2000; Del Boca & Noll, 2000) and exercise (Silsbury, Goldsmith, & Rushton, 2015). Moreover, as self-report measures of behaviour have been used in much self-affirmation research to date (e.g., Armitage et al., 2011; Cooke, Trebaczyk, Harris, & Wright, 2014; Jessop, Sparks, Buckland, Harris, & Churchill, 2014; Knight & Norman, 2016), this limitation is not unique to the current programme of research. Nonetheless, with the recent growth in personal technologies, for example, smart phones and wearable technology, that are able to objectively and accurately record behaviour, it would be useful for future studies to replicate the current findings utilising these additional, more objective measures.

All of the studies in the current research programme also relied on self-report measures to assess indices of open-minded responding and cognitions indicative of motivations to change behaviour. Again, while this is common feature of the self-affirmation literature and within psychological research more generally, it is possible that such measures are susceptible to bias. As such, individuals may display social desirability biases and desirability characteristics, for example, by responding to questions in a manner that might be viewed more favourably by the researcher. Furthermore, there were multiple measures assessing specific constructs, meaning that people may have had response fatigue by the time they got to items later in the questionnaire. Although an attempt was made to put the items of the greatest empirical interest earlier on in the questionnaires, nonetheless, this may have meant that important findings were missed. Taken together, future research should use alternative measures, such as implicit measures, that may be less vulnerable to potential biases with a less exploratory emphasis on measure selection (Gawronski & De Houwer, 2014).

Despite this, however, there are benefits to using self-report measures in research. In particular, self-report measures can be used to collect large quantities of

data in a relatively short time period. Practically, self-report questionnaires can easily be administered online, which has the benefit of potentially broadening the sample of participants. Relatedly, completing the self-affirmation online (probably when the participant is ready/has the time) is arguably more reflective of how self-affirmation interventions are likely to be used in real world settings.

Individual Difference Measure of Systematic Processing

A second limitation of the current research programme is the reliance on one measure of systematic processing, the five systematic processing items from the Risk Information Seeking and Processing (RISP) scale (Griffin, Neuwirth, Giese, & Dunwoody, 2002). The RISP items were used in the current thesis as they relate specifically to how individuals systematically process health information, as well as there being a lack of direct measures of systematic processing available at the time the current programme of research commenced. However, several issues with the scale need to be acknowledged. Firstly, as the systematic processing measure was self-report, it assumes that participants are aware of the processing styles they use when appraising health information, and this may not always be the case. Secondly, the reliability of the scale was relatively low across the empirical studies reported in this thesis (α = .69 − .73). While the analyses in the current thesis indicated that the reliability of the scale could not be improved by removing any of the items, it is notable that better estimates of reliability have been reported in published papers elsewhere (e.g., Kahlor, Dunwoody, Griffin, Neuwirth, & Giese, 2003; Soane, Schubert, Lunn, & Pollard, 2015; Yang, Aloe, & Feeley, 2014). Despite these specific limitations, and in the absence of an alternative appropriate measure of systematic processing, the methodological decision was made to keep the measure of systematic processing the same across all of the studies to allow for more direct comparisons between the findings. Nonetheless, it

would be informative for future research to explore the impact of different measures of systematic processing, when such suitable measures become available.

Generalisability of the Sample

A third limitation of the current research programme relates to the recruitment method and samples used in each study. With regard to the former, the empirical studies reported in this thesis relied on self-selecting samples. Specifically, for each study, potential participants were invited to take part in a study exploring their thoughts and feelings about alcohol consumption (Chapter 2 and 3), exercise (Chapter 4) and Dry January (Chapter 5). Furthermore, the recruitment strategy in some studies within this thesis (Chapter 2, Study 1; Chapter 4; Chapter 5) asked potential participants to pass the recruitment email on to other people they thought might be interested in taking part. Such self-selection may have introduced sampling biases; arguably, individuals may be more likely to participate in the study if they were interested in the behavioural focus of the study and, potentially, may have been be more open-minded to the health information initially.

With regard to the composition of the sample, students and females were over-represented in the current thesis, which may limit the generalisability of the subsequent findings. In particular, students comprised the entire sample in Chapter 2 (Study 2) and Chapter 3, and the majority of the sample in Chapter 5. While every attempt was made to recruit participants who were more representative of the general population in some studies (Chapter 2, Study 1; Chapter 4, Study 1; Chapter 5), students still formed a large proportion of those samples. Research suggests that the health behavioural patterns of students do not reflect those of the general population, with university students engaging in higher levels of alcohol consumption than the general population (Plant & Plant, 2006), as well as large proportions not engaging in adequate levels of exercise

(Dodd, Al-Nakeeb, Nevill, & Forshaw, 2010). Furthermore, females were the majority sample in the studies reported in Chapters 4 and 5, and, while in an attempt to increase the perceived similarity of the character depicted in the narrative information, the studies reported in Chapter 2 and 3 comprised only female participants. However, women are an important group to sample, given that their reported alcohol consumption has not decreased in recent years, whereas men's alcohol consumption has (NatCen Social Research, 2016).

Nevertheless, it is important for future research to replicate the findings of the current thesis with a more representative sample of the general population.

Consideration of Statistical Power

There were potential issues with statistical power within this thesis due to small sample sizes in some studies. In particular, the sample sizes were lower than statistically required according to G*Power analysis (see Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007) in both studies presented in Chapter 2 and the second study presented in Chapter 4. This was due to higher than anticipated proportions of non-drinkers (Chapter 2) and high exercisers (Chapter 4) completing the study which became apparent only at the analysis stage. As such, removing these participants to whom the information was not relevant reduced the sample size, thereby limiting the statistical power of these studies to detect any differences between self-affirmation and control conditions (Asendorpf et al., 2013). However, it is notable that studies in the self-affirmation literature have detected differences on outcome measures between self-affirmation and control conditions using similar designs and sample sizes to those used in the current thesis (e.g., Cooke et al., 2014; Harris & Napper, 2005). Speculatively, it is possible that the pattern of marginally significant results observed in Chapter 2 and Chapter 4 (Study 2) may have been significant if the respective studies

were sufficiently powered. Taken together, therefore, it would be advisable for future research to replicate the studies presented in this thesis – in particular, those presented in Chapter 2 and 4 – using adequate sample sizes to ensure sufficient statistical power.

Future Directions

In addition to the future directions for research outlined in specific chapters in this thesis and outlined so far in this discussion, several specific areas open for potential future research investigation are discussed below. These include the combined impact of self-affirmation and health information, further individual difference variables, the longevity of self-affirmation effects on behaviour change, and the application of self-affirmation in the real world.

Exploring the Combined Impact of Self-Affirmation and Health Information

On the basis of the findings in this thesis, further investigation of self-affirmation and health information combinations seems warranted. For example, future research could add to the body of literature exploring self-affirmation and health messages based on theories (e.g., The Theory of Planned Behaviour) and constructs (e.g., self-efficacy) predicting behaviour (Epton et al., 2014; Good & Abraham, 2011; Norman et al., 2016). One extension of the research presented here is incorporating into future studies a no-message control condition, in which participants are not exposed to any health information. Such a true control condition may help to establish whether a particular message actually leads to benefits for open-minded responding, cognitions indicative of motivations to change behaviour or behaviour change *per se*, compared to receiving no information.

Building on the current research programme, an important further research extension would be to explore the impact of self-affirmation on health information seeking. Health information is increasingly obtained online (Dalmer, 2017; Sillence,

Briggs, Harris, & Fishwick, 2007), which may be of varying quality and robustness; would self-affirmation in this context help people to navigate to credible, reliable information? Furthermore, heath information can both threaten and reassure people about their behavioural choices. Research suggests that people may be drawn to information that reassures (Sillence et al., 2007); would self-affirmation here encourage more balanced health information seeking? Such findings would be relevant from a health promotion perspective, given that a major concern of health professionals is the reliability of health information – and the respective impact of unreliable information – available on the internet.

Isolating Features of Narrative Health Information that Enhance Persuasiveness

The different studies across this thesis used narrative health information that varied on many factors, including their medium, content and context. It is entirely possible that these factors impacted on the overall persuasiveness of each narrative. However, because each narrative in this thesis differed on so many narrative characteristics it is therefore hard to quantify the extent to which these different features in isolation led to effects.

For example, the narrative in Chapter 3 and 5 was genuine, whereas the others were adapted from genuine narratives. Would this make a difference to their perceived credibility and therefore how persuasive they are? The majority of narratives used in this thesis were presented in a way more typical of presenting health information (by leaflet or video), whereas the graphic narrative in Chapter 4 compromised a more novel information presentation method which may have meant that recipients were less likely to be defensive to it if they were already aware of the health claims within it (Rothman & Salovey, 2007). Does a narrative have to present a novel story or use a novel format to be persuasive, as has been suggested with more traditional forms of information (see

Rothman & Salovey, 2007)? Moreover, there is some preliminary evidence that narratives focussing on health risks are less effective than those promoting healthier behaviour (de Graaf et al., 2016) which would be worthwhile exploring further; this thesis had the former with narratives focussing on the risks of alcohol consumption (Chapter 2, 3) and the latter explaining the benefits of exercise (Chapter 4) and an alcohol-free month (Chapter 5). Only the narrative in Chapter 4 gave strategies for planning behaviour change and focused on promoting efficacy. Falzon Radel, Cantor, and d'Arripe-Longueville (2015) found that narratives showing the character perform the desired behaviour enhanced the receiver's planning strategies and, therefore, their self-efficacy perceptions; what information needs to be portrayed in the narrative to most effectively target key cognitive constructs known to be indicative of behaviour change (e.g., efficacy, intention)?

Building on this, future research would therefore benefit from exploring which specific message features work to enhance or inhibit the effectiveness of narratives. That is, identifying which elements of narratives are key to their persuasiveness. Importantly, this will help ascertain how – or how not – narrative information may be most effectively used to promote behaviour change.

Exploring the Moderating Impact of Individual Difference Variables of Self-Affirmation Effects

As this thesis provided some evidence that systematic processing moderated the impact of self-affirmation on outcomes, future research should continue to explore potential individual difference variables on self-affirmation effects. Although focussing on systematic processing as a moderator was informative for extending the body of self-affirmation research in the current thesis, an important further research extension would be to explore heuristic processing – in which people focus "on that subset of available

information that enables them to use simple inferential rules, schemata, or cognitive heuristics to formulate their judgments" (Chaiken et al., 1989, p. 213). This, according to dual processing models, can co-occur with systematic processing when appraising health information (Chaiken, Liberman, & Eagly, 1989; Chen & Chaiken, 1999). Therefore, it would be of merit to explore whether heuristic processing might moderate self-affirmation effects, as well as the interactive, additive or biasing impact of coinciding systematic and heuristic processing on outcomes.

It may also be of relevance to explore other potential individual difference variables that may moderate the impact of self-affirmation. Some key contenders relate to health information processing, such as unrealistic optimism (Klein et al., 2010), consideration of future consequences (Strathman, Gleicher, Boninger, & Edwards, 1994), impulsivity (Deyoung, 2010; Spinella, 2007) and empathy (Davis, 1980). Furthermore, there is emerging evidence that variables linked to self-regard, such as self-esteem (Düring & Jessop, 2015) or spontaneous self-affirmation (Ferrer et al., 2015; Taber et al., 2015), may moderate effects, but these results are in need of replication. Importantly, this direction of research may add to our understanding of the limitations to the positive effects of self-affirming.

The Longevity of Self-Affirmation Effects on Behaviour Change

The current thesis provided some evidence suggesting that self-affirmation could effectively be combined with some forms of narrative health information to promote behaviour change at 7-day follow-up for some groups of people (Chapter 2 and 3). Critically, however, for self-affirmation to be truly effective as a health promotion technique, such positive changes in behaviour ultimately need to be substantiated over the longer-term. It would therefore be informative for future research to incorporate longer follow-up periods, which also explore patterns of health behaviour over time. In

doing so, particular research attention should be paid to whether it is profitable to combine self-affirmation with other techniques shown to help encourage longer-term behaviour change, such as implementation intentions and planning interventions (Hagger et al., 2016). Encouragingly, recent research has begun to explore such combinations but have shown mixed effects to date (Armitage & Arden, 2016; Ferrer, Shmueli, Bergman, Harris, & Klein, 2012; Harris et al., 2014; Jessop et al., 2014; Norman & Wrona-Clarke, 2016).

It is notable that the application of self-affirmation theory to the field of education has demonstrated positive effects of self-affirming at significantly longer follow-up intervals. For example, Cohen, Garcia, Purdie-Vaughns, Apfel, and Brzustoski, (2009) found positive effects of self-affirmation up to two years after intervention. Critically, a key difference between the typical self-affirmation study in the health domain and one applied in education outcomes is the number of times that participants complete a self-affirmation manipulation, which is usually once and three times respectively. Self-affirming at multiple time-points seems conducive to recent theoretical developments suggesting that self-affirmation may instigate recursive processes over time (Cohen & Sherman, 2014). Drawing from this, therefore, it would seem worthwhile to explore the impact of completing multiple self-affirmation manipulations in the health domain, with a particular focus on outcomes measured at longer-time periods.

Application of Self-Affirmation in the Real World

Much more research attention should be paid to how self-affirmation manipulations can usefully be applied in real world settings. In the current thesis, self-affirmation was experimentally induced by completing the established values essay manipulation, which takes about ten minutes and, arguably, may only be accessible for

individuals with higher levels of literacy. As such, it is unrealistic to assume that an individual outside of a research context would write an essay before receiving health information. This is especially problematic as defensiveness may reduce their initial engagement with the self-affirmation essay, but sharing information about the intervention to encourage essay completion may, instead, lead to rebound effects. That is, awareness of the effects of self-affirmation may lessen its impact to promote positive behaviour change (Sherman et al., 2009).

For self-affirmation to be effectively employed in real world health promotion campaigns, it would therefore be advisable for research to establish shorter ways and means of self-affirming. For example, to reduce the likelihood of individuals being aware of self-affirmation, the manipulation could be integrated into the health information (e.g., Jessop, Simmonds, & Sparks, 2009) or onto product labelling (e.g., Armitage & Arden, 2016). However, this would seemingly need to run in parallel with research exploring which formats of health information would be most conducive to positive effects of self-affirmation, as well as another strand of research exploring the timing of being self-affirmed in relation to receiving health information.

Conclusions

Overall, the research in the thesis provides some evidence that self-affirmation can promote more open-minded responding to narrative information, but the impact on cognitions indicative of motivations to change behaviour were mixed. Furthermore, the results suggest that self-affirmation can be usefully applied with a narrative video to promote behaviour change. The current programme of research also provides evidence that the impact of self-affirmation on outcomes, when presented alongside narrative health information, was moderated by individual differences in systematic processing. Generally, results suggest that the benefits of self-affirmation are most apparent for

individuals low in systematic processing, with mixed findings for those high in systematic processing. Future research is needed to clarify the boundaries to the effectiveness of self-affirmation before the intervention is administered at a population level, firstly, by exploring the effectiveness of self-affirmation when used in combination with different forms of narrative and, secondly, by investigating the impact of individual difference variables when exploring self-affirmation effects. Together, this thesis therefore broadens the applied potential of self-affirmation to include positive effects for some recipients, even after being presented with information in a narrative format.

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APPENDIX A: Materials Relating to Chapter 2

Questionnaires referred to in Chapter 2, Study 1

Baseline Questionnaire

Alcohol Study - Part 1

Thank you for agreeing to take part in this study.

This questionnaire is the first part of a three-part study and I shall be contacting you in 24 hours to ask you some further questions, and then again a week later.

In this first questionnaire you will be asked some questions concerning your thoughts and beliefs about yourself and others. This questionnaire should take around 10 minutes to complete.

Participants who complete all three questionnaires will be entered in to a prize draw with the chance of winning £100!

You are welcome to take part if you are:
Over the age of 18
Able to read and write in English

PLEASE NOTE:
Your answers will be confidential.
You are under no obligation to take part in this study.
Participation is purely voluntary and you are free to withdraw at any time.
Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards.

Please read the instructions carefully and answer the questions in the order they appear on the page.

You will not be able to return to a page once you have clicked the continue button. If you wish to take part, please complete the consent form below.

CONSENT FORM

Please select your choice below
1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:
You have read the above information
You voluntarily agree to participate
You are over 18 years of age
If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree

( ) Disagree

___

2) Please enter today's date.

_____

3) Please enter your email address below (so we can contact you to take part in the second and third parts of the study and to let you know if you are the winner of the prize draw). Names and email addresses will be removes from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.

_____

4) Please write your name below.

_____

5) Are you male or female?
( ) Male   ( ) Female

6) Please enter your age.

_____

7) What is your current occupation?
( ) Student   ( ) Employed   ( ) Unemployed   ( ) Other

8) If you answered student in the previous question, what subject are you studying?
_____

9) Which of the following best describes your ethnicity? (Please tick one of the following).
( ) White (European) ( ) White (Other)   ( ) Black (Caribbean) ( ) Black (African)
( ) Black (Other)   ( ) Mixed race   ( ) Indian   ( ) Pakistani   ( ) Chinese
( ) Other

___

In this section we'd like to ask you about your thoughts and feeling about yourself.

Please note, there are no right or wrong answers to any of the questions. We are interested only in finding out what YOU think and feel.

10) When we think of ourselves, our thoughts are sometimes negative and sometimes positive. We are interested in the POSITIVE thoughts you have about yourself.

Please indicate how much you agree or disagree with each of the following statements.

Thinking POSITIVELY about myself is something…

	Disagree completely 1	2	3	4	5	6	Agree completely 7
… I do frequently							
… I do automatically.							
… I do unintentionally.							

… that feels sort of natural to me.							
… I do without further thinking.							
… that would require mental effort to stop me doing.							
… I do every day.							
… I start doing before I realise I'm doing it.							
… I would find hard not to do.							
… I don't do consciously.							
… that's typically "me".							
… I have been doing for a long time.							

Below is a list of statements dealing with your general feelings about yourself. For each of the following statements, please indicate how strongly you agree or disagree.

11) I am able to do things as well as most other people.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

12) I feel that I am a person of worth, at least on an equal basis with others.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

13) I certainly feel useless at times.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

14) I take a positive attitude toward myself.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

15) At times I think I am no good at all.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

16) On the whole, I am satisfied with myself.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

17) I feel that I have a number of good qualities.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

18) I feel I do not have much to be proud of.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

19) I wish I could have more respect for myself.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

20) All in all, I am inclined to feel that I am a failure.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

21) I have high self-esteem.
Not very true of me ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Very true of me

In this questionnaire we are interested in how you respond to things that make you feel anxious or threatened.

Sometimes when we face difficulties, challenges or problems in our daily lives we think about ourselves. We are interested in how often you tend to think about yourself when things start to bother you.

22) When I feel threatened or anxious by people or events I find myself....

	Disagree completely 1	2	3	4	5	6	Agree completely 7
… thinking about my strengths.							
… recalling times I did the right thing.							
… thinking about my values.							
… thinking about my principles.							
… thinking about the people who are important to me.							
… thinking about what I stand for.							
… thinking about my family.							
… thinking about my friends.							
… thinking about the things that I am good at.							
… thinking about the things that I like about myself.							
… thinking about the things that I am bad at.							
… thinking about the things that I value about myself.							
… thinking about the people that believe in me.							
… thinking about my failings.							
…. thinking about the people I love.							
… thinking about the things that I'd like to change about myself.							
… thinking about the people that I trust.							
… thinking about the things I believe in.							

… remembering the things that I have succeeded at.							

Next we'd like to ask you about your thoughts and feelings towards others. Please indicate how well each of the following statements describes you.

23) I often have tender, concerned feelings for people less fortunate than me.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

24) Sometimes I don't feel very sorry for other people when they are having problems.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

25) When I see someone being taken advantage of, I feel kind of protective towards them.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

26) Other people's misfortunes do not usually disturb me a great deal.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

27) When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

28) I am often quite touched by things that I see happen.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

29) I would describe myself as a pretty soft-hearted person.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

Now, we are interested in how you usually or typically respond to the thought of a personal risk (defined as the possibility of some harm coming to you).

Please indicate how well each of the following statements describes you.

When faced with the possibility of any type of personal risk...
30) I make myself feel at ease by saying "this can't happen to someone like me".
Not at all like me   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5 ( ) 6 ( ) 7   Very much like me

31) I reassure myself that such bad things won't happen to someone like me.
Not at all like me   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5 ( ) 6 ( ) 7   Very much like me

32) I find myself angry at the suggestion that this could happen to me.
Not at all like me   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5 ( ) 6 ( ) 7   Very much like me

33) I clearly imagine the risk and imagine how I would feel if it happened to me.
Not at all like me   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5 ( ) 6 ( ) 7   Very much like me

34) I find myse
34) lf thinking the chances are I will be ok.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

35) I find it easy to come up with arguments as to why it won't happen to me.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

36) I ignore it because I am an optimistic sort of person.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

37) I assume that on balance I will be safe.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

38) I find it easy to show that this risk is not relevant to me.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

39) I tend to focus on the risk and think about the effects it could have on me.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

40) I can usually come up quickly with reasons why this won't happen to me.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

41) I think I will address the problem if and when it happens, not before.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

42) I consider how the risk could affect me even before I think about how unlikely it is.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

43) I am generally not willing to imagine the risk happening to me.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

44) I think in a fast and furious way about reasons why this won't happen to me.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

45) I am willing to think about the risk even if it makes me feel uncomfortable.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

46) I have trouble thinking of reasons why the risk wouldn't happen to me.
Not at all like me   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very much like me

---

Finally, we'd like to ask you how you typically respond when you come across information about the health risks of alcohol.

The following statements represent different ways that people personally deal with information that they run across in the mass media and other places about the health risks of alcohol consumption. For each statement, please indicate how strongly you agree or disagree.

47) After I encounter information about the health risks of alcohol consumption, I am likely to stop and think about it.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

48) If I need to act on the health risks of alcohol consumption, the more viewpoints I get the better.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

49) After thinking about the health risks of alcohol consumption, I have a broader understanding.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

50) When I encounter information about the health risks of alcohol consumption, I read or listen to most of it, even though I may not agree with its perspective.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

51) It is important for me to interpret information about the health risks of alcohol consumption in a way that applies directly to my life.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

52) When I encounter information about the health risks of alcohol consumption, I focus on only a few key points.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

53) There is far more information on the health risks of alcohol consumption than I personally need.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

54) When I see or hear information about the health risks of alcohol consumption, I rarely spend much time thinking about it.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

55) If I need to act on information about the health risks of alcohol consumption, the advice of one expert is enough for me.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

Thank You!

Final Page

Thank you very much for taking the time to complete this questionnaire.

In the next 24 hours you will receive an e-mail with a web link to the second questionnaire. Please try and complete the second questionnaire as soon as you receive the email.
If you have any questions about the study please contact me (Kerry Fox) via email (k.j.fox@sussex.ac.uk).

Time 1 Questionnaire

Alcohol Study - Part 2

Thank you for agreeing to take part in this study.

This questionnaire is the second part of our three-part study. Initially you will be asked to answer some questions about your alcohol consumption and your values. You will then be asked to read some health-related information and to give your responses to this. This questionnaire should take about 30 minutes to complete.

The third and final questionnaire will be sent to you 7 days after you complete this questionnaire.

Participants who complete all three questionnaires will be entered in to a prize draw with the chance of winning £100!

You are welcome to take part if you are:
Over the age of 18
Able to read and write in English

PLEASE NOTE:
Your answers will be confidential.
You are under no obligation to take part in this study. Participation is purely voluntary and you are free to withdraw at any time.
Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards.
Please read the instructions carefully and answer the questions in the order they appear on the page.
You will not be able to return to a page once you have clicked the continue button.
If you wish to take part, please complete the consent form below.

Consent form
Please select your choice below
1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:
You have read the above information
You voluntarily agree to participate
You are over 18 years of age
If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree
( ) Disagree

Background information

2) Please enter today's date.
_____

3) Please enter your email address below (so we can contact you to take part in the third part of the study and to let you know if you are the winner of the prize draw). Names and email addresses will be removes from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.

_____

4) Please write your name below.

_____

First, we'd like to ask you some questions about your alcohol consumption.

5) Over the last 7 days, how much alcohol did you drink? Below, please could you detail the types of drinks (i.e., beer, wine, spirits), types of containers (i.e., small glass, can, pint, single or double measure), and number of each of these drinks consumed on each day of a typical 7 days.

An example would be: 1 can of Stella, 1 bottle of Smirnoff Ice.

	Alcohol consumed
Monday	___
Tuesday	___
Wednesday	___
Thursday	___
Friday	___
Saturday	___
Sunday	___

6) Overall, my attitude towards drinking is...
Extremely negative   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5 ( ) 6 ( ) 7   Extremely positive

7) Overall, my attitude towards drinking is...
Extremely unfavourable ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5 ( ) 6 ( ) 7 Extremely favourable

SELF-AFFIRMATION CONDITION:

Ranking of personal values

In this section we are interested in investigating personal values. By values we mean the moral principles and standards by which people try to live their lives. For example, honesty might be a core value for some people. That is, they may try to be honest in all they do - whether in dealing with other people or when working.

Using the list below, please select the value that is MOST important to YOU.
If more than one value is equally important to YOU, then please select just one of them.
If the value YOU find most important does not appear on the list, that is not a problem; just choose "Other" and indicate what that value is in the text box below.

Artistic skills/ Aesthetic appreciation
Sense of Humour
Relations with friends / family
Spontaneity / Living life in the moment
Social skills
Music ability / appreciation
Physical fitness / Health
Political activism
Business / Money
Academic achievement
Other

8) Write in your value below, either from the list or your own value.
_____

9) Why is this value important to YOU?

Please write THREE reasons why this value is important to you and ONE example of
something you've done to demonstrate how important it is to you. Thank you.

Reason 1	___
Reason 2	___
Reason 3	___
Example	___

CONTROL CONDITION:

Ranking of personal values

In this section we are interested in investigating personal values. By values we mean the
moral principles and standards by which people try to live their lives. For example,
honesty might be a core value for some people. That is, they may try to be honest in all
they do - whether in dealing with other people or when working.

Using the list below, please select the value that is LEAST important to YOU.
If more than one value is equally unimportant to YOU, then please select just one of
them. If the value YOU find least important does not appear on the list, that is not a
problem; just choose "Other" and indicate what that value is in the text box below.

Artistic skills/ Aesthetic appreciation

Sense of Humour
Relations with friends / family
Spontaneity / Living life in the moment
Social skills
Music ability / appreciation
Physical fitness / Health
Political activism
Business / Money
Academic achievement
Other

8) Write in your value below, either from the list or your own value.
_____

9) Why might this value be important to SOMEONE ELSE?

Please write THREE reasons why you think this value might be important to SOMEONE ELSE and ONE example of something someone else might do to demonstrate how important it is. Thank you.

Reason 1	___
Reason 2	___
Reason 3	___
Example	___

Values

10) How important to you is the value that you selected to write about?
( ) Extremely unimportant
( ) Unimportant
( ) Slightly unimportant
( ) Neither unimportant or important
( ) Slightly important
( ) Important
( ) Extremely important

Please indicate to what extent the following words describe how you currently feel, that is how you feel RIGHT NOW.

11) RIGHT NOW I feel LOVING
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Very much

12) RIGHT NOW I feel COMPASSIONATE
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Very much

13) RIGHT NOW I feel CONNECTED

Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Very much

14) RIGHT NOW I feel HAPPY

Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Very much

15) RIGHT NOW I feel SAD

Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Very much

Alcohol and Breast Cancer

Please now click on the link to read the following health information. *[link here to the health information]*

16) Please indicate what disease the health information you've just read linked to alcohol consumption.

_____

We are interested in your thoughts and feelings about the health information you have just read.

17) Overall, how believable did you find the content of the information?

Unbelievable   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Believable

18) Overall, how convincing did you find the content of the information?

Unconvincing   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Convincing

19) The information was relevant to me.

Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

20) How much did the information make you feel tense?

Not at all tense   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very tense

21) How much did the information make you feel anxious.

Not at all anxious   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very anxious

22) The message in the information was distorted.

Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

23) The message in the information was exaggerated.

Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

Please indicate which of the following applied to you WHILE you were reading the health information:

24) I felt fearful.

Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

25) I felt irritated.

Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

26) I felt angry.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

27) I felt annoyed.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

28) I felt agitated.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

29) I thought about how the information was personally relevant to me.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

To what extent do you agree with the following statements?

30) I am worried about my current level of alcohol consumption.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

31) If I don't cut down on my alcohol consumption, I will feel very vulnerable to breast cancer.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

32) I worry about the consequences of my current level of alcohol consumption.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

33) How easy it for you to IMAGINE yourself developing breast cancer as a result of your current level of alcohol consumption?
Not easy at all   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very easy

34) How likely do you think YOU will be to develop breast cancer as a result of your current level of alcohol consumption?
Not at all   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very likely

Please indicate which of the following applied to you WHILE you were reading the information.

35) I thought about what actions I myself might take based on what I read.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

36) I skimmed through the information.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

37) I found myself making connections between the information and what I've read or heard about elsewhere.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

38) I did not spend much time thinking about the information.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

39) I thought about how the information related to other things I know.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

40) The message did not contain useful information on which I based my decision.
Strongly disagree　　( ) 1　( ) 2　( ) 3　( ) 4　( ) 5　( ) 6　( ) 7　　Strongly agree

41) I tried to think about the importance of the information for my daily life.
Strongly disagree　　( ) 1　( ) 2　( ) 3　( ) 4　( ) 5　( ) 6　( ) 7　　Strongly agree

42) While reading the information I did not think about the arguments presented in the information.
Strongly disagree　　( ) 1　( ) 2　( ) 3　( ) 4　( ) 5　( ) 6　( ) 7　　Strongly agree

43) I tried to relate the ideas in the information to my health.
Strongly disagree　　( ) 1　( ) 2　( ) 3　( ) 4　( ) 5　( ) 6　( ) 7　　Strongly agree

44) The information contained too many conflicting viewpoints.
Strongly disagree　　( ) 1　( ) 2　( ) 3　( ) 4　( ) 5　( ) 6　( ) 7　　Strongly agree

45) While I was reading the health information, or right after reading it, I also found myself …

	Not at all 1	2	3	4	5	6	A lot 7
… thinking about my strengths.							
… thinking about my values.							
… thinking about my principles.							
… thinking about my family.							
… thinking about what I stand for.							
… thinking about my friends.							
… thinking about the things I am good at.							
… thinking about the things I like about myself.							
… thinking about my failings.							
… thinking about the people I love.							
… thinking about myself positively.							

46) How many positive thoughts about yourself did you have while you were reading the information, or right after reading it?
None　　( ) 1　　　( ) 2　　　( ) 3　　　( ) 4　　　( ) 5　　　( ) 6　　　( ) 7　　　A lot

47) How often did you think about things that you could be proud of or things you are really good at while you were reading the information, or right after reading it?

Never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very often

Next, we'd like to ask for your thoughts and feelings about reducing the amount of alcohol you drink in the next 7 days, *by at least 2 units*.

Remember, 2 units of alcohol is approximately a standard 175ml glass of wine (12%), an ordinary strength pint of lager, bitter or cider (3-4%) or a small double measure of spirits (2 x 25ml at 40%).

In the table below, you can find out how many units are in some common drinks.

Below you can find out how many units there are in some common drinks.

A pint of premium strength (5–5.5%) lager, cider or extra strength bitter
3 units

A large 2 x 35 ml double measure of spirits (40%)
3 units (Just under)

A large 250 ml glass of wine (12%)
3 units

A 175 ml glass of wine (12%)
2 units

A pint of ordinary strength (3–4%) lager, cider or best bitter
2 units

A 275 ml bottle of alcopop (5%)
1.5 units (Just under)

A small 25 ml single measure of spirits (40%)
1 unit

48) I intend to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Definitely do not intend to ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Definitely intend to

49) Do you intend to reduce the amount of alcohol you drink in the next 7 days by at least 2 units?
Definitely do not intend to ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Definitely intend to

50) How much personal control do you feel you have over whether or not you reduce the amount of alcohol you drink in the next 7 days by at least 2 units?
No control   ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Complete control

51) I feel in complete control of whether or not I reduce the amount of alcohol that I drink in the next 7 days by at least 2 units.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

52) If I wanted to I could reduce the amount of alcohol I drink in the next 7 days by at least 2 units.

Definitely false ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Definitely true

53) For me to reduce the amount of alcohol that I drink in the next 7 days by at least 2 units would be...

Impossible ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Possible

54) Most people who are important to me think I should / should not reduce the amount of alcohol that I drink in the next 7 days by at least 2 units.

Think I should not ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Think I should

55) Most people who are important to me would approve / disapprove of me reducing the amount of alcohol I drink in the next 7 days by at least 2 units.

Would disapprove ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Would approve

56) For me to reduce the amount of alcohol I drink in the next 7 days by 2 units would be...

Bad ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Good

57) For me to reduce the amount of alcohol I drink in the next 7 days by at least 2 units would be ...

Harmful ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Beneficial

58) For me to reduce the amount of alcohol I drink in the next 7 days by at least 2 units would be ...

Unenjoyable ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Enjoyable

59) For me to reduce the amount of alcohol I drink in the next 7 days by at least 2 units would be ...

Foolish ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Wise

60) For me to reduce the amount of alcohol I drink in the next 7 days by at least 2 units would be ...

Unpleasant ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Pleasant

61) I think of myself as the sort of person who would want to reduce the amount of alcohol I drink in the next 7 days by at least 2 units .

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

62) Reducing the amount of alcohol I drink in the next 7 days by at least 2 units is an important part of who I am.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

63) I am the type of person who would reduce the amount of alcohol I drink in the next 7 days by at least 2 units.

Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

64) How easy is it for you to IMAGINE yourself reducing the amount of alcohol you drink in the next 7 days by at least 2 units?
Not at all easy   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Extremely easy

65) How easy is it for you to VISUALISE yourself reducing the amount of alcohol you drink in the next 7 days by at least 2 units?
Not at all easy   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Extremely easy

66) I would feel regret if I did not reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

67) If I reduce the amount of alcohol I drink in the next 7 days by at least 2 units it will reduce my chances of getting breast cancer.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

68) Reducing the amount of alcohol I drink in the next 7 days by at least 2 units is an effective way to reduce my chances of getting breast cancer.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

69) If I don't reduce the amount of alcohol I drink in the next 7 days by at least 2 units, I feel that my chances of getting breast cancer at some point in my life are...
Very small   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Very big

70) If I don't reduce the amount of alcohol I drink in the next 7 days by at least 2 units, I would feel vulnerable to getting breast cancer at some point in my life.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

71) If I did not reduce the amount of alcohol I drink in the next 7 days by at least 2 units I would feel regret.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

72) For me, reducing the amount of alcohol I drink in the next 7 days by at least 2 units would mean drinking no more than...
_____

Next we'd like to ask you about your EXPECTATIONS -- whether you expect to reduce or increase the amount of alcohol you will drink in the next 7 days compared to the previous 7 day period.

73) In the next 7 days...
( ) I expect to REDUCE the amount of alcohol I drink in the next 7 days
( ) I expect to drink about the SAME amount of alcohol in the next 7 days
( ) I expect to INCREASE the amount of alcohol I drink in the next 7 days

74) If you expect you are going to REDUCE the amount of alcohol you drink in the next 7 days, how many units do you expect you will reduce by?

Remember, 1 unit of alcohol is approximately half a pint of normal strength beer or cider (3-4%), one small glass of wine (12%), one measure of spirit (25ml at 40%).

_____

75) If you expect you are going to INCREASE the amount of alcohol you drink in the next 7 days, approximately how many units do you expect you will increase by?

Remember, 1 unit of alcohol is approximately half a pint of normal strength beer or cider (3-4%), one small glass of wine (12%), one measure of spirit (25ml at 40%).

_____

76) Please circle one answer for each of the following statements:-

	Yes	No
Have you ever been diagnosed as having breast cancer?	[ ]	[ ]
Is there a history of breast cancer in your family?	[ ]	[ ]
Have any of your friends ever been diagnosed as having breast cancer?	[ ]	[ ]

According to the health information you read...
77) What is the most commonly diagnosed cancer in the UK?
( ) Breast   ( ) Lung   ( ) Prostate   ( ) Bowel

78) What is the name of the hormone the information stated alcohol increased the levels of?
( ) Progesterone   ( ) Oestrogen   ( ) Testosterone   ( ) Cortisol

79) What is the average strength of wine?
( ) 10.5%   ( ) 11.5%   ( ) 12.5%   ( ) 13.5%

80) How many pubs now serve spirits in 35ml measures rather than the traditional 25ml?
( ) 25%   ( ) 33%   ( ) 50%   ( ) 75%

Please now think back to the task you were asked to complete near the start of this questionnaire, when we asked you to choose and write about personal values. We would like to ask you about your experiences of completing that task.
The task about values made me think about…

81) The task about values made me think about...
Things I don't like about myself   Things I like about myself
          ( ) 3   ( ) 2   ( ) 1   ( ) 0   ( ) 1   ( ) 2   ( ) 3

82) The task about values made me think about...
Things I'm bad at   Things I'm good at
          ( ) 3   ( ) 2   ( ) 1   ( ) 0   ( ) 1   ( ) 2   ( ) 3

83) The task about values made me think about...

Things I don't value about myself   Things I do value about myself
( ) 3   ( ) 2   ( ) 1   ( ) 0   ( ) 1   ( ) 2   ( ) 3

Doing the task about values made me aware of...

84) ...Who I am.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5 ( ) 6 ( ) 7   Strongly agree

85) ...My values (the principles and standards by which I try to live my life).
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5 ( ) 6 ( ) 7   Strongly agree

---

Thank You!

Thank you very much for taking the time to complete this questionnaire.

In a week's time you will receive an e-mail with a web link to the final questionnaire. Please try and complete the questionnaire as soon as you receive that email.

If you have any questions about the study so far, please contact Kerry Fox via email (k.j.fox@sussex.ac.uk).

Follow-up Questionnaire

Alcohol Study - Part 3

Thank you for agreeing to take part in this study.

This questionnaire is the third and final part of our study. In it you will be asked to answer a few further questions about your alcohol consumption. This questionnaire should take about 10 minutes to complete.

Participants who complete this questionnaire will be entered in to a prize draw with the chance of winning £100!

You are welcome to take part if you are:
Over the age of 18
Able to read and write in English

PLEASE NOTE:
Your answers will be confidential.
You are under no obligation to take part in this study. Participation is purely voluntary and you are free to withdraw at any time.
Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards.
Please read the instructions carefully and answer the questions in the order they appear on the page.
You will not be able to return to a page once you have clicked the continue button.

If you wish to take part, please complete the consent form below.
Consent form
Please select your choice below

1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:
You have read the above information
You voluntarily agree to participate
You are over 18 years of age
If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree
( ) Disagree

Background information

2) Please enter today's date. (NOTE: date will appear in MM/DD/YYYY format)
_____

3) Please enter your email address below (so we can contact you if you are the winner of the prize draw. Please provide the same email as in the previous questionnaire). Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.
_____

4) Please write your name below.
_____

First, we'd like to ask you some questions about your alcohol consumption.

5) In the last 7 days, how much alcohol did you drink? Below, please could you detail the types of drinks (i.e., beer, wine, spirits), types of containers (i.e., small glass, can, pint, single or double measure), and number of each of these drinks consumed on each day of a typical 7 days.

An example would be: 1 can of Stella, 1 bottle of Smirnoff Ice.

	Alcohol consumed
Monday	___
Tuesday	___
Wednesday	___
Thursday	___
Friday	___
Saturday	___
Sunday	___

6) In the past 7 days...
( ) ...I think I have REDUCED the amount of alcohol I have drunk.
( ) ...I think I have drunk the SAME amount of alcohol as I normally do.

( ) ...I think I have INCREASED the amount of alcohol I have drunk.

7) How many units do you think that you have increased or decreased your alcohol consumption by?
_____

8) I have reduced the amount of alcohol I drink over the past 7 days by at least 2 units
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

9) In the past 7 days, I have reduced the amount of alcohol I drink by at least 2 units.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

Next, we'd like to ask for your thoughts and feelings about reducing the amount of alcohol you drink in the next 7 days, *by at least 2 units*.

Remember, 2 units of alcohol is approximately a standard 175ml glass of wine (12%), an ordinary strength pint of lager, bitter or cider (3-4%) or a small double measure of spirits (2 x 25ml at 40%).

10) I intend to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Definitely do not intend to ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Definitely intend to

11) Do you intend to reduce the amount of alcohol you drink in the next 7 days by at least 2 units?
Definitely do not intend to ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Definitely intend to

12) If I wanted to I could reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Definitely true ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Definitely false

13) For me to reduce the amount of alcohol that I drink in the next 7 days by at least 2 units would be...
Impossible ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Possible

14) I know for sure that I could reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

15) If I wanted to reduce the amount of alcohol I drink in the next 7 days by at least 2 units, I know that I could do it.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

I am confident that I can reduce the amount of alcohol I drink in the next 7 days by at least 2 units...
16) ...even if I find myself in situations in which this might be difficult.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

17) ...even when things are not going well for me.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

Next we'd like to ask you about your EXPECTATIONS -- whether you expect to reduce or increase the amount of alcohol you will drink in the next 7 days compared to the previous 7 day period.

18) In the next 7 days...
( ) ...I expect to REDUCE the amount of alcohol I drink.
( ) ...I expect to drink about the SAME amount of alcohol.
( ) ...I expect to INCREASE the amount of alcohol I drink.
How many units do you expect you will drink in the next 7 day period?

Remember, 1 unit of alcohol is approximately half a pint of normal strength beer or cider (3-4%), one small glass of wine (12%), one measure of spirit (25ml at 40%).
_____

I am confident that I could RESTART reducing the amount of alcohol I drink in the next 7 days by at least 2 units.

19) ...even if I have stopped doing so for a day or two.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

20) ...even if I have stopped doing so for a few days.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

21) ...even if I have stopped doing so for a long time.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7   Strongly agree

Thank you, that brings us to the end of the study. We would now like you to ask you some questions about the study.

22) What do you think the purpose of this study was?
_____

23) Did you think the tasks were related in any way?
( ) Yes   ( ) No

24) If yes, can you tell us something about how?
_____

25) Do you feel that your responses on any of the later tasks were influenced by your response to an earlier task?
( ) Yes   ( ) No

26) If yes, can you tell us something about how?
_____

27) Have you completed any of these tasks before today?
( ) Yes   ( ) No

28) If yes, can you briefly describe which one and when.
_____

29) Do you think this affected your responses today in any way?
_____

<div align="center">Thank You!</div>

Final Page

Thank you very much for taking the time to complete this questionnaire.
This study was designed to explore whether the form of health information about the risks of alcohol would influence your responses to information about alcohol. Therefore some of you were asked to read health information that was based on statistical evidence, while some of you were asked to read health information that was based on narrative evidence.

We were also interested in exploring whether writing about a personally important value would influence responses to the information about alcohol. Therefore some of you were asked to write about an important value before reading this information and some of you were asked to write about an unimportant value. You all then answered the same questions about alcohol.

In addition, we were interested in exploring how your personal traits might influence your responses to the information about alcohol. Therefore, the first questionnaire asked you a number of questions designed to assess your personal traits.

If you would like to withdraw your questionnaire now that you know the purpose of the study and/or you would like more information about this study, please contact me (Kerry Fox) via email (k.j.fox@sussex.ac.uk)

If you would like more information about how to decrease the amount you alcohol you drink you may find the following website useful:
NHS Choices (alcohol and breast cancer):
http://www.nhs.uk/news/2011/04April/Pages/drinking-alcohol-increased-cancer-risk.aspx
BBC Health (alcohol and breast cancer):
http://www.bbc.co.uk/news/health-15539450
NHS Choices (alcohol): http://www.nhs.uk/livewell/alcohol/Pages/Alcoholhome.aspx
NHS Choices (breast cancer in women):
http://www.nhs.uk/Conditions/Cancer-of-the-breast-female/Pages/Introduction.aspx

If you would like more information about what services are available to you if you are worried about your levels of alcohol consumption or risk of breast cancer, you may find the following website useful:
NHS Services: http://www.nhs.uk/Service-Search/

Questionnaires referred to in Chapter 2, Study 2

Baseline Questionnaire

Alcohol Study - Part 1

Thank you for agreeing to take part in this study.

This questionnaire is the first part of a three-part study and I shall be contacting you in 24 hours to ask you some further questions, and then again a week later.

In this first questionnaire you will be asked some questions concerning your thoughts and beliefs about yourself and others. This questionnaire should take around 10 minutes to complete.

Participants who complete all three questionnaires will be awarded course credits!!
You are welcome to take part if you are:
Aged 18 or over
Able to read and write in English

PLEASE NOTE:
Your answers will be confidential.
You are under no obligation to take part in this study.
Participation is purely voluntary and you are free to withdraw at any time.
Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards.
Please read the instructions carefully and answer the questions in the order they appear on the page.
You will not be able to return to a page once you have clicked the continue button.
If you wish to take part, please complete the consent form below.

CONSENT FORM
Please select your choice below.

1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:

You have read the above information
You voluntarily agree to participate
You are aged 18 years of age or over

If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree
( ) Disagree

Background information

2) Please enter today's date.
_____

3) Please enter your email address below (so we can contact you to take part in the second and third parts of the study).

Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.
_____

4) Please write your name below.
_____

5) Are you male or female?
( ) Male   ( ) Female

6) Please enter your age.
_____

7) What subject are you studying?
_____

8) What year of study are you in?
( ) First year   ( ) Second year

9) Which of the following best describes your ethnicity? (Please tick one of the following).
( ) White   ( ) Mixed   ( ) Asian or Asian British   ( ) Black or Black British
( ) Chinese   ( ) Other Ethnic Group   ( ) Prefer not to say

In this section we'd like to ask you about your thoughts and feeling about yourself.

Please note, there are no right or wrong answers to any of the questions. We are interested only in finding out what YOU think and feel.

10) When we think of ourselves, our thoughts are sometimes negative and sometimes positive. We are interested in the POSITIVE thoughts you have about yourself.

Please indicate how much you agree or disagree with each of the following statements.

Thinking POSITIVELY about myself is something…

	Disagree completely 1	2	3	4	5	6	Agree completely 7
… I do automatically.							
… that feels sort of natural to me.							
… I do without further thinking.							
… I would find hard not to do.							
… that's typically "me".							

In this questionnaire we are interested in how you respond to things that make you feel anxious or threatened.

Sometimes when we face difficulties, challenges or problems in our daily lives we think about ourselves. We are interested in how often you tend to think about yourself when things start to bother you.

11) When I feel threatened or anxious by people or events I find myself...

	Disagree completely 1	2	3	4	5	6	Agree completely 7
… thinking about my strengths.							
… thinking about my values.							
… thinking about my principles.							
… thinking about my family.							
… thinking about what I stand for.							

… thinking about my friends.							
… thinking about the things that I am good at.							
… thinking about the things that I like about myself.							
… thinking about my failings.							
… thinking about the people I love.							

12) I have high self-esteem.
Not very true of me   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Very true of me

---

Next we'd like to ask you about your thoughts and feelings in general towards others. Please indicate how well each of the following statements describes you.

13) I often have tender, concerned feelings for people less fortunate than me.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

14) Sometimes I don't feel very sorry for other people when they are having problems.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

15) When I see someone being taken advantage of, I feel kind of protective towards them.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

16) Other people's misfortunes do not usually disturb me a great deal.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

17) When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

18) I am often quite touched by things that I see happen.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

19) I would describe myself as a pretty soft-hearted person.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

---

Now we'd like to ask you about your thoughts about alcohol and how you typically respond when you come across information about the health risks of alcohol

consumption.

The following statements represent different ways that people personally deal with information that they come across in the mass media and other places about the health risks of alcohol consumption. For each statement, please indicate how strongly you agree or disagree.

20) After I encounter information about the health risks of alcohol consumption, I am likely to stop and think about it.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

21) If I need to act on the health risks of alcohol consumption, the more viewpoints I get the better.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

22) After thinking about the health risks of alcohol consumption, I have a broader understanding.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

23) When I encounter information about the health risks of alcohol consumption, I read or listen to most of it, even though I may not agree with its perspective.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

24) It is important for me to interpret information about the health risks of alcohol consumption in a way that applies directly to my life.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

25) When I encounter information about the health risks of alcohol consumption, I focus on only a few key points.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

26) There is far more information on the health risks of alcohol consumption than I personally need.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

27) When I see or hear information about the health risks of alcohol consumption, I rarely spend much time thinking about it.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

28) If I need to act on information about the health risks of alcohol consumption, the advice of one expert is enough for me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

---

Now we'd like to ask you your thoughts and feelings about how you usually feel.

Please indicate how well each of the following statements describes you.

29) I have a tendency to act on the spur of the moment without really thinking ahead.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   Does describe me well

30) I often get so excited about new ideas and suggestions that I forget to check if there are any disadvantages.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   Does describe me well

31) I often embark on things too hastily.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   Does describe me well

32) I'm the sort of person who takes things as they come.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   Does describe me well

33) I usually "talk before I think".
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   Does describe me well

34) When I make a decision I usually make it quickly.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   Does describe me well

35) I consider myself an impulsive person.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   Does describe me well

---

Below is a collection of statements about your everyday experience. For each item, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be.

Please treat each item separately from every other item.

36) I could be experiencing some emotion and not be conscious of it until some time later.
Almost Always   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

37) I break or spill things because of carelessness, not paying attention, or thinking of something else.
Almost Always   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

38) I find it difficult to stay focused on what's happening in the present.
Almost Always   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

39) I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.
Almost Always   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

40) I tend not to notice feelings of physical tension or discomfort until they really grab my attention.
Almost Always   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

41) I forget a person's name almost as soon as I've been told it for the first time.
Almost Always   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

42) It seems I am "running on automatic" without much awareness of what I'm doing.
Almost Always ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

43) I rush through activities without being really attentive to them.
Almost Always ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

44) I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there.
Almost Always ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

45) I do jobs or tasks automatically, without being aware of what I'm doing.
Almost Always ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

46) I find myself listening to someone with one ear, doing something else at the same time.
Almost Always ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

47) I drive places on "automatic pilot" and then wonder why I went there.
Almost Always ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

48) I find myself preoccupied with the future or the past.
Almost Always ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

49) I find myself doing things without paying attention.
Almost Always ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

50) I snack without being aware that I'm eating.
Almost Always ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   Almost Never

---

Finally, we'd like to ask you about how you typically act towards yourself in difficult times. Please indicate how well each of the following statements describes you.

51) When I fail at something important to me I become consumed by feelings of inadequacy.
Almost never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Almost always

52) I try to be understanding and patient towards those aspects of my personality I don't like.
Almost never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Almost always

53) When something painful happens I try to take a balanced view of the situation.
Almost never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Almost always

54) When I'm feeling down, I tend to feel like most other people are probably happier than I am.
Almost never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Almost always

55) I try to see my failings as part of the human condition.
Almost never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Almost always

56) When I'm going through a very hard time, I give myself the caring and tenderness I need.
Almost never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Almost always

57) When something upsets me I try to keep my emotions in balance.
Almost never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Almost always

58) When I fail at something that's important to me, I tend to feel alone in my failure.
Almost never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Almost always

59) When I'm feeling down I tend to obsess and fixate on everything that's wrong.
Almost never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Almost always

60) When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people
Almost never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Almost always

61) I'm disapproving and judgemental about my own flaws and inadequacies.
Almost never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Almost always

62) I'm intolerant and impatient towards those aspects of my personality I don't like.
Almost never   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Almost always

63) Overall, my attitude towards drinking alcohol is...
Extremely negative   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5 ( ) 6 ( ) 7   Extremely positive

64) Overall, my attitude towards drinking alcohol is...
Unfavourable   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Favourable

---

Thank You!

Thank you very much for taking the time to complete this questionnaire.

In the next 24 hours you will receive an e-mail with a web link to the second questionnaire.

Please try to complete the second questionnaire as soon as you receive the email.
If you have any questions about the study please contact me (Kerry Fox) via email (K.J.Fox@sussex.ac.uk).

Time 1 Questionnaire

Alcohol Study - Part 2

Thank you for agreeing to take part in this study.

This questionnaire is the second part of our three-part study. Initially you will be asked to answer some questions about your alcohol consumption and your values. You will

then be asked to read some health-related information and to give your responses to this. This questionnaire should take about 30 minutes to complete.

The third and final questionnaire will be sent to you 7 days after you complete this questionnaire.

Participants who complete all three questionnaires will be awarded course credits!
You are welcome to take part if you are:
Aged 18 or over
Able to read and write in English

PLEASE NOTE:
Your answers will be confidential.
You are under no obligation to take part in this study. Participation is purely voluntary and you are free to withdraw at any time.
Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onward.
Please read the instructions carefully and answer the questions in the order they appear on the page.
You will not be able to return to a page once you have clicked the continue button.
If you wish to take part, please complete the consent form below.

Consent form
Please select your choice below
1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:
You have read the above information
You voluntarily agree to participate
You are 18 years of age or over

If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree   ( ) Disagree

Background information

2) Please enter today's date.
_____

3) Please enter your email address below (so we can contact you to take part in the final part of the study. Please provide the same e-mail as in the previous questionnaire).

Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.
_____

4) Please write your name below.
_____

Alcohol consumption
First, we'd like to ask you some questions about your alcohol consumption.

5) In the last 7 days, how much alcohol did you drink? Below, please could you detail the types of drinks (i.e., beer, wine, spirits), types of containers (i.e., small glass, can, pint, single or double measure), and number of each of these drinks consumed on each day of a typical 7 days.

An example would be: 1 can of Stella, 1 bottle of Smirnoff Ice.

	Alcohol consumed
Monday	_____
Tuesday	_____
Wednesday	_____
Thursday	_____
Friday	_____
Saturday	_____
Sunday	_____

SELF-AFFIRMATION CONDITION:

Ranking of personal values

In this section we are interested in investigating people's values. By values we mean the moral principles and standards by which people try to live their lives. For example, honesty might be a core value for some people. That is, they may try to be honest in all they do - whether in dealing with other people or when studying or working. Following are some personal values that other people have described as important to them.

Conscientiousness
Spirituality/religiousness
Compassion
Intelligence
Generosity
Trustworthiness
Creativity
Hedonism (the pursuit of pleasure)
Friendliness
Kindness
Spontaneity

6) Please select the value that is MOST important to YOU, and write it in the space provided below.

Please note, this value does NOT have to appear on the list above. The MOST important value to me is...
_____

7) Why is this value important to YOU?

Please write THREE reasons why this value is important to you and ONE example of something you've done to demonstrate how important it is to you.

	.
Reason 1	_____
Reason 2	_____
Reason 3	_____
Example	_____

CONTROL CONDITION:

Ranking of personal values

In this section we are interested in investigating people's values. By values we mean the moral principles and standards by which people try to live their lives. For example, honesty might be a core value for some people. That is, they may try to be honest in all they do - whether in dealing with other people or when studying or working. Following are some personal values that other people have described as important to them.

Conscientiousness
Spirituality/religiousness
Compassion
Intelligence
Generosity
Trustworthiness
Creativity
Hedonism (the pursuit of pleasure)
Friendliness
Kindness
Spontaneity

8) Please select the value that is LEAST important to YOU, and write it in the space provided below.

Please note, this value does NOT have to appear on the list above. The LEAST important value to me is...

_____

9) Why might this value be important to SOMEONE ELSE?

Please write THREE reasons why you think this value might be important to SOMEONE ELSE and ONE example of something someone else might do to demonstrate how important it is to them.

	.
Reason 1	_____
Reason 2	_____
Reason 3	_____
Example	_____

10) How important to you is the value that you selected to write about?
( ) Extremely unimportant
( ) Unimportant
( ) Slightly unimportant
( ) Neither unimportant or important
( ) Slightly important
( ) Important
( ) Extremely important

Please indicate to what extent the following words describe how you currently feel, that is how you feel RIGHT NOW.

11) RIGHT NOW I feel LOVING towards other people.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

12) RIGHT NOW I feel COMPASSIONATE towards other people.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

13) RIGHT NOW I feel CONNECTED to other people.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

14) RIGHT NOW I feel EMPATHY towards other people.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

15) RIGHT NOW I feel HAPPY.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

16) RIGHT NOW I feel SAD.
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very much

17) RIGHT NOW I feel IMPULSIVE.
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very much

18) RIGHT NOW I find myself doing things without paying attention.
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very much

19) RIGHT NOW I find it difficult to stay focused on what's happening in the present.
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very much

---

20) Please click on this link to read the health information. When you are finished reading the information close the new PDF window and return to the survey window.

21) Please tick to confirm you have read the information and closed the PDF file.

---

22) Which disease did the health information you've just read link to alcohol consumption?
_____

We are interested in your thoughts and feelings about the health information you have just read.

23) Overall, how believable did you find the content of the information?
Unbelievable ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Believable

24) Overall, how convincing did you find the content of the information?
Unconvincing ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Convincing

25) The information was relevant to me.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

26) How much did the information make you feel tense?
Not at all tense ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very tense

27) The information was distorted.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

28) The information was exaggerated.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

29) How much did the information make you feel anxious?
Not at all anxious ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very anxious

30) Please indicate which of the following applied to you WHILE you were reading the health information.

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
I felt fearful.							
I felt irritated.							
I felt angry.							
I felt annoyed.							
I felt agitated.							

WHILE reading the health information...

31) ...I thought about how the information was personally relevant to me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

32) ...I was criticising the information.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

33) ...I was thinking of points that went against the information's arguments.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

34) ...I was feeling sceptical of the information's arguments.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

To what extent do you agree with the following statements?

35) I am worried about my current level of alcohol consumption.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

36) If I don't cut down on my alcohol consumption, I will feel very vulnerable to breast cancer.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

37) I worry about the consequences of my current level of alcohol consumption.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

38) How easy is it for you to IMAGINE yourself developing breast cancer if you continue with your current level of alcohol consumption?
Not easy at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very easy

39) How likely do you think YOU are to develop breast cancer if you continue with your current level of alcohol consumption?
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very likely

40) How easy is it for you to VISUALISE yourself developing breast cancer if you continue with your current level of alcohol consumption?
Not easy at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very easy

Please indicate which of the following applied to you WHILE you were reading the health information.

41) I thought about what actions I myself might take based on what I read.
Completely disagree ( ) 1   ( ) 2   ( ) 3 ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

42) I skimmed through the information.
Completely disagree ( ) 1   ( ) 2   ( ) 3 ( ) 4   ( ) 5 ( ) 6   ( ) 7   Completely agree

	Not at all 1	2	3	4	5	6	A lot 7
… thinking about my strengths.							
… thinking about my values.							
… thinking about my principles.							
… thinking about my family.							
… thinking about what I stand for.							
… thinking about my friends.							
… thinking about the things I am good at.							
… thinking about the things I like about myself.							
… thinking about my failings.							
… thinking about the people I love.							

… thinking about myself positively.							

43) I found myself making connections between the information and what I've read or heard about elsewhere.
Completely disagree ( ) 1   ( ) 2 ( ) 3 ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

44) I did not spend much time thinking about the information.
Completely disagree ( ) 1   ( ) 2 ( ) 3 ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

45) I thought about how the information related to other things I know.
Completely disagree ( ) 1   ( ) 2 ( ) 3 ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

46) The message did not contain useful information on which I based my decision.
Completely disagree ( ) 1   ( ) 2 ( ) 3 ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

47) I tried to think about the importance of the information for my daily life.
Completely disagree   ( ) 1   ( ) 2 ( ) 3 ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

48) While reading the information I did not think about the arguments presented.
Completely disagree   ( ) 1   ( ) 2 ( ) 3 ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

49) I tried to relate the ideas in the information to my health.
Completely disagree   ( ) 1   ( ) 2 ( ) 3   ( ) 4   ( ) 5 ( ) 6   ( ) 7   Completely agree

50) The information contained too many conflicting viewpoints.
Completely disagree   ( ) 1   ( ) 2 ( ) 3   ( ) 4 ( ) 5 ( ) 6   ( ) 7   Completely agree

---

51) While I was reading the health information, or right after reading it, I also found myself …

52) How many positive thoughts about yourself did you have while you were reading the information, or right after reading it?
None   ( ) 1   ( ) 2 ( ) 3   ( ) 4 ( ) 5 ( ) 6   ( ) 7   A lot

53) How often did you think about things that you could be proud of or things you are really good at while you were reading the information, or right after reading it?
Never   ( ) 1   ( ) 2 ( ) 3   ( ) 4 ( ) 5 ( ) 6   ( ) 7   Very often

---

Next, we'd like to ask for your thoughts and feelings about reducing the amount of alcohol you drink in the next 7 days, *by at least 2 units*.

Remember, 2 units of alcohol is approximately a standard 175ml glass of wine (12%), an ordinary strength pint of lager, bitter or cider (3-4%) or a small double measure of spirits (2 x 25ml at 40%).

54) I intend to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Definitely do not intend to ( ) 1 ( ) 2   ( ) 3   ( ) 4 ( ) 5 ( ) 6 ( ) 7 Definitely intend to

55) Do you intend to reduce the amount of alcohol you drink in the next 7 days by at least 2 units?

Definitely do not intend to ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Definitely intend to

For me reduce the amount of alcohol you drink in the next 7 days by at least 2 units would be

56) Unimportant   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Important
57) Harmful   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Beneficial
58) Worthless   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Valuable
59) Unpleasant   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Pleasant
60) Unenjoyable   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Enjoyable
61) Boring   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Exciting

62) I think of myself as the sort of person who would want to reduce the amount of alcohol I drink in the next 7 days by at least 2 units .
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Strongly agree

63) Reducing the amount of alcohol I drink in the next 7 days by at least 2 units is an important part of who I am.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Strongly agree

64) I am the type of person who would reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Strongly agree

65) I would feel regret if I did not reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Strongly agree

66) If I don't reduce the amount of alcohol I drink in the next 7 days by at least 2 units, I feel that my chances of getting breast cancer at some point in my life are...
Very small   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Very big

67) If I don't reduce the amount of alcohol I drink in the next 7 days by at least 2 units, I would feel vulnerable to getting breast cancer at some point in my life.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Strongly agree

68) If I did not reduce the amount of alcohol I drink in the next 7 days by at least 2 units I would feel regret.
Strongly disagree   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Strongly agree

69) If during the next 7 days I did not reduce the amount of alcohol I drink, it would bother me.
Very unlikely   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Very likely

70) If during the next 7 days I did not reduce the amount of alcohol I drink, I would regret it.
Very unlikely   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Very likely

71) If during the next 7 days I did reduce the amount of alcohol I drink, I would feel proud.
Very unlikely   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5   ( ) 6   ( ) 7   Very likely

72) If during the next 7 days I did reduce the amount of alcohol I drink, I would be happy.

Very unlikely　　　　　　( ) 1 ( ) 2　( ) 3 ( ) 4　( ) 5　( ) 6　( ) 7　　　Very likely

73) I have made a detailed plan regarding...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
... when to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.							
... where to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.							
... how to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.							
... how often to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.							

In this section, we are interested in whether you plan and prepare when, where and how you will reduce the amount of alcohol you drink in the next 7 days by at least 2 units. Some people plan ways to reduce the amount of alcohol they drink, and some other people have no set plans. Both ways can be effective in getting you to reduce the amount of alcohol you drink by at least 2 units, so it does not matter if you have, or have not made plans to reduce the amount of alcohol you drink over the next 7 days.

Please answer the following questions are honestly as possible.

74) I have planned when to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.

Strongly disagree　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7　Strongly agree

75) I have planned where to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.

Strongly disagree　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7　Strongly agree

76) I have planned how to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.

Strongly disagree　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7　Strongly agree

77) I have planned how often I am going to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

78) I have committed myself to a certain time to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

79) I have committed myself to a certain place to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

---

Some situations may tempt you to drink more alcohol than you had meant to. In this question, we are interested in whether you make coping plans regarding such situations.

Some people make coping plans, other people have no set plans, they deal with tempting situations when they arise. Both ways can be effective in coping with things that may prevent you from reducing the amount of alcohol that you drink by at least 2 units, so that it does not matter if you have, or have not made coping plans over the next 7 days.

Please answer the following questions as honestly as possible.

80) I have made a detailed plan regarding what to do if something interferes with my plan to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

81) I have made a detailed plan regarding how to cope with possible set backs of reducing the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

82) I have made a detailed plan regarding what to do in difficult situations in order to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

83) I have planned how to make the most of good opportunities to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

84) I have made a detailed plan regarding how to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

---

85) Please select one answer for each of the following statements:-

	Yes	No
Have you ever been diagnosed as having breast cancer?		
Is there a history of breast cancer in your family?		
Have any of your friends ever been diagnosed as having breast cancer?		

We would now like you to answer some questions about Sam's breast cancer story that was in the health information that you read earlier.

Please answer the following questions are honestly as possible.

86) How well did you imagine the story?
Very poorly   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very well

87) How well did you imagine yourself in yourself in the story?
Very poorly   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very well

88) How much were you able to empathise with Sam?
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

89) How much did you feel any emotions about the story?
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much
90) While I was reading, I forgot about the world around me.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

91) While I was reading, my attention was fully captured by the story.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

92) While I was reading, I was fully concentrated on the story.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

93) While I was reading the story, I visualised the events that took place in it.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

94) I had a vivid image of the events in the story.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

95) During reading I saw before me what was described in the story.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

96) The story affected me emotionally.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

97) I found the story moving.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

98) While I was reading, the story touched my emotions.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

99) I empathised with Sam.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

100) While I was reading, I felt sad when Sam felt sad.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

101) While I was reading, I imagined what it would be like to be in Sam's position.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

102) While I was reading, I put myself in Sam's position.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

103) While I was reading, I pictured what it would be like for Sam to experience having breast cancer.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

---

Please now think back to the task you were asked to complete near the start of this questionnaire, when we asked you to choose and write about personal values. We would like to ask you about your experiences of completing that task.

104) The task about values made me think about...
Things I don't like about myself   Things I like about myself
                ( ) 3   ( ) 2   ( ) 1   ( ) 0   ( ) 1   ( ) 2   (3)

105) The task about values made me think about...
Things I'm bad at   Things I'm good at
                ( ) 3   ( ) 2   ( ) 1   ( ) 0   ( ) 1   ( ) 2   (3)

106) The task about values made me think about...
Things I don't
value about myself   Things I do value about myself
                ( ) 3   ( ) 2   ( ) 1   ( ) 0   ( ) 1   ( ) 2   (3)

Doing the task about values made me aware of...

107) ...Who I am.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

108) ...My values (the principles and standards by which I try to live my life).
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

---

Thank You!

Final Page

Thank you very much for taking the time to complete this questionnaire.

In a week's time you will receive an e-mail with a web link to the final questionnaire. Please try to complete the questionnaire as soon as you receive that email.

If you have any questions about the study so far, please contact me (Kerry Fox) via email (K.J.Fox@sussex.ac.uk).

Follow-up Questionnaire

Alcohol Study - Part 3

Thank you for agreeing to take part in this study.

This questionnaire is the third and final part of our study. In it you will be asked to answer a few further questions about your alcohol consumption. This questionnaire should take about 10 minutes to complete.

Participants who complete this questionnaire will be awarded course credits!

You are welcome to take part if you are:
Aged 18 or over
Able to read and write in English

PLEASE NOTE:
Your answers will be confidential.
You are under no obligation to take part in this study. Participation is purely voluntary and you are free to withdraw at any time.
Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards.
Please read the instructions carefully and answer the questions in the order they appear on the page.
You will not be able to return to a page once you have clicked the continue button.
If you wish to take part, please complete the consent form below.

Consent form
Please select your choice below

1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:
You have read the above information
You voluntarily agree to participate
You are 18 years of age or over

If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree
( ) Disagree

Background information

2) Please enter today's date.
_____

3) Please enter your email address below (Please provide the same email as in the previous questionnaire).

Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.
_____

4) Please write your name below.
_____

First, we'd like to ask you some questions about your alcohol consumption.

5) In the last 7 days, how much alcohol did you drink? Below, please could you detail the types of drinks (i.e., beer, wine, spirits), types of containers (i.e., small glass, can, pint, single or double measure), and number of each of these drinks consumed on each day of a typical 7 days.

An example would be: 1 can of Stella, 1 bottle of Smirnoff Ice.

	Alcohol consumed
Monday	_____
Tuesday	_____
Wednesday	_____
Thursday	_____
Friday	_____
Saturday	_____
Sunday	_____

6) I have reduced the amount of alcohol I have drunk in the past 7 days by at least 2 units.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

7) I have reduced the amount of alcohol I have drunk in the past 7 days by at least 2 units.
Definitely have not ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Definitely have

8) In the past 7 days...
( ) ...I think I have REDUCED the amount of alcohol I have drunk.
( ) ...I think I have drunk the SAME amount of alcohol as I normally do.
( ) ...I think I have INCREASED the amount of alcohol I have drunk.

9) By approximately how many units do you think you have increased or decreased your alcohol consumption?

12) During the past 7 days I have ...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
... constantly monitored myself to see whether I have reduced the amount of alcohol I drink by at least 2 units.							
... watched carefully that I have reduced the amount of alcohol I drink by at least 2 units.							
... often had the intention to reduce the amount of alcohol I drink by at least 2 units.							
... always been aware that I needed to reduce the amount of alcohol I drink by at least 2 units.							
... really tried to reduce the amount of alcohol I drink by at least 2 units.							
... tried my best to act in accordance to my standards.							

Thank you. Now I would like to ask for your thoughts about your alcohol consumption over the *NEXT 7 days*.

Remember, 2 units of alcohol is approximately a standard 175ml glass of wine (12%), an ordinary strength pint of lager, bitter or cider (3-4%) or a small double measure of spirits (2 x 25ml at 40%).

5) Considering the NEXT 7 day period, how much alcohol will you drink?
Below, please could you detail the types of drinks (i.e., beer, wine, spirits), types of containers (i.e., small glass, can, pint, single or double measure), and number of each of these drinks consumed on each day of a typical 7 days.

An example would be: 1 can of Stella, 1 bottle of Smirnoff Ice.

	Alcohol consumed
Monday	_____
Tuesday	_____
Wednesday	_____
Thursday	_____
Friday	_____
Saturday	_____
Sunday	_____

13) In the NEXT 7 days, I have made a detailed plan regarding...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
... when to drink alcohol. .							
... where to drink alcohol.							
... how to drink alcohol.							
... how often to drink alcohol. k.							

10) I intend to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Definitely do not intend to ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Definitely do intend to

11) Do you intend to reduce the amount of alcohol you drink in the next 7 days by at least 2 units?
Definitely do not intend to ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Definitely do intend to

Thank you, that brings us to the end of this study which comprised of three questionnaires.

We would now like you to ask you some questions about this study.

14) What do you think the purpose of this study was?
_____

15) Did you think the tasks were related in any way?
( ) Yes   ( ) No

16) If yes, can you tell us something about how?
_____

17) Do you feel that your responses on any of the later tasks were influenced by your response to an earlier task?
( ) Yes   ( ) No

18) If yes, can you tell us something about how?
_____

19) Have you completed any of the tasks on the three questionnaires before?
( ) Yes   ( ) No

20) If yes, can you briefly describe which one and when.
_____

21) Do you think this affected your responses today in any way?
_____

Thank You!

Final Page

Thank you very much for taking the time to complete this questionnaire.

This study was designed to explore whether the form of health information about the risks of alcohol would influence your responses to information about alcohol. Therefore some of you were asked to read health information that was based on statistical evidence, while some of you were asked to read health information that was based on narrative evidence.

We were also interested in exploring whether writing about a personally important value would influence responses to the information about alcohol. Therefore some of you were asked to write about an important value before reading this information and some

of you were asked to write about an unimportant value. You all then answered the same questions about alcohol.

In addition, we were interested in exploring how your personal traits might influence your responses to the information about alcohol. Therefore, the first questionnaire asked you a number of questions designed to assess your personal traits.

If you would like to withdraw your questionnaire now that you know the purpose of the study and/or you would like more information about this study, please contact me (Kerry Fox) via email (K.J.Fox@sussex.ac.uk)

If you would like more information about how to decrease the amount you alcohol you drink you may find the following website useful:
NHS Choices (alcohol and breast cancer):
http://www.nhs.uk/news/2011/04April/Pages/drinking-alcohol-increased-cancer-risk.aspx
BBC Health (alcohol and breast cancer):
http://www.bbc.co.uk/news/health-15539450
>NHS Choices (alcohol): http://www.nhs.uk/livewell/alcohol/Pages/Alcoholhome.aspx
NHS Choices (breast cancer in women):
http://www.nhs.uk/Conditions/Cancer-of-the-breast-female/Pages/Introduction.aspx
NHS Choices (breast cancer in men):
http://www.nhs.uk/conditions/cancer-of-the-breast-male/pages/introduction.aspx

If you would like more information about what services are available to you if you are worried about your levels of alcohol consumption or risk of breast cancer, you may find the following website useful:
NHS Services: http://www.nhs.uk/Service-Search/

Correlations between Dependent Variables for the Study Reported in Chapter 2

Appendix A Table 1

Correlation between Dependent Variables Reported in Chapter 2, Study 1

	1	2	3	4	5	6	7	8	9	10
1. Message acceptance	1.00									
2. Personal relevance	.22	1.00								
3. Message derogation	-.31*	-.13	1.00							
4. Counter-arguing	-.53**	.11	.63*	1.00						
5. Negative affect	.29*	.60**	-.06	.04	1.00					
6. Risk	.13	.44**	-.22	-.03	.53**	1.00				
7. Intention	-.15	.22	-.06	.01	.19	.30*	1.00			
8. Identity	.00	.09	-.13	-.17	.28*	.35*	.49*	1.00		
9. Attitude	-.06	-.00	-.23	-.13	.19	.27	.39**	.74**	1.00	
10. Anticipated regret	.07	.10	-.01	-.05	.41**	.36**	.59**	.55**	.41**	1.00

*p < .05, **p < .01

Appendix A Table 2
Correlation between Dependent Variables Reported in Chapter 2, Study 2

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Message acceptance	1.00												
2. Personal relevance	.39**	1.00											
3. Message derogation	-.62**	-.07	1.00										
4. Counter-arguing	-.42**	.05	.55**	1.00									
5. Negative affect	.52**	.52**	-.30*	-.06	1.00								
6. Risk	.41**	.54**	-.16	.03	.69**	1.00							
7. Intention	.16	.37**	-.15	-.02	.40**	.28**	1.00						
8. Identity	.24	.34**	-.19	-.14	.50**	.34**	.79**	1.00					
9. Attitude	.20	.37	-.10	-.06	.30*	.22	.72**	.62**	1.00				
10. Anticipated regret	.26*	.28*	-.09	-.08	.46**	.27*	.61**	.73**	.58**	1.00			
11. Narrative emotion	.58**	.25*	-.57**	-.27*	.64**	.44**	.22	.34**	.08	.38**	1.00		
12. Narrative attention	.53**	.46**	-.45**	-.22	.52**	.29*	.22	.33**	.13	.33**	.55**	1.00	
13. Perspective taking	.43**	.31*	.22	.03	.55**	.38**	.20	.33**	.04	.24	.57**	.45**	1.00

*$p < .05$, **$p < .01$

Exploring the Impact of Self-Affirmation and Systematic Processing in Response to Statistical Health Information

Two studies are presented here. These aimed to explore the effects of self-affirmation on (i) measures of open-minded responding to health information (e.g., message acceptance) and cognitions indicative of motivation to change behaviour (e.g., intentions) and (ii) actual behaviour change, after exposure to statistical information detailing the link between alcohol consumption and breast cancer. Moreover, the potential moderating role of systematic processing was explored in both studies.

Study 1

Method

Design and Procedure

Study 1 had a one-way between-subjects experimental design, with the independent variable being self-affirmation condition (self-affirmation vs. control). Social media (Facebook or Twitter) was used to contact potential participants, who were asked if they would be willing to complete a study exploring their beliefs about alcohol consumption. This introductory message contained a weblink to the initial (Baseline) questionnaire. Twenty-four hours after completing this questionnaire, participants who had supplied an email address were asked to complete the Time 1 questionnaire and were randomly allocated to the self-affirmation or control condition by the host website, Survey Gizmo. Seven days after completing the Time 1 questionnaire, participants were contacted again via email asking them to complete the Follow-up questionnaire. All emails contained a weblink to the relevant questionnaire. To encourage participation and reduce attrition, participants who completed all three questionnaires were entered into a £100 cash prize draw.

Participants

Fifty-two female participants who met the inclusion criteria (i.e., they described their ethnicity as 'White') and who had completed the Baseline questionnaire responded to the Time 1 questionnaire 24 hours later. The mean age of the sample was 26.17 years ($SD = 6.42$; range = 18-54) and the majority were not students (65.62%). Fifty-one participants responded to the Follow-up questionnaire.

Materials

Apart from the health information (described below), the Baseline Questionnaire, Time 1 Questionnaire and Follow-up Questionnaire used in this study were identical to those used in Chapter 2, Study 1.

Statistical health information. The statistical health information leaflet presented prevalence statistics (i.e., around 3,100 cases of breast cancer in the UK each year are linked to alcohol consumption) and research to describe that "by the age of 80, the number of women who will develop breast cancer will be 8.8 out of 100 if they don't drink at all, 10.1 out of 100 if they have 2 drinks a day and 13.3 out of 100 if they have 6 drinks a day". Then, it explained that low-level alcohol consumption can cause breast cancer because it increases oestrogen levels and that "it's not just people who have 'drinking problems' who have higher risks". The section concluded by stating that "alcohol has a weaker effect on the risk of breast cancer than on other cancers, but it starts having an effect at a lower level". All statements were true and from the Cancer Research UK website (CRUK: http://www.cancerresearchuk.org/cancer-help/about-cancer/cancer-questions/alcohol-and-breast-cancer). In total, the leaflet was 230 words in length.

Results

Preliminary analyses

Tests of differential attrition between Time 1 and Follow-up were not conducted owing to low attrition ($n = 1$ drop-out). Preliminary analyses (one-way ANOVAs, chi-square) revealed there were no differences or association between conditions on baseline variables, ps > .234.

Main analyses

Effects of self-affirmation and systematic processing on indices of openness to health information and cognitive indicators of behaviour change. A series of moderated hierarchical regression analyses was conducted to (i) test the hypothesis that self-affirmation would have a main effect on each measure of open-minded responding to the health risk information and cognitions indicative of motivation to change behaviour and (ii) determine whether systematic processing moderated any impact of self-affirmation on these outcomes. For each analysis, condition (dummy coded; control = 0, self-affirmation = 1) was entered as a predictor at step 1, mean-centred systematic processing scores were entered at step 2, and the interaction term between condition and mean-centred systematic processing was entered at step 3. Resultant analyses are reported in the tables below. Significant interactions were decomposed using simple slopes analysis (Aiken & West, 1991) in which the dependent variable was regressed onto condition for those with low (1 *SD* below the mean), mean and high (1 *SD* above the mean) systematic processing scores. Analyses are only reported in text if they revealed either a significant main effect of self-affirmation or significant self-affirmation X systematic processing interaction

Main effects of self-affirmation. There were no main effects of self-affirmation (entered at step 1) on any outcome measure.

Moderation by systematic processing.

Negative affect. Systematic processing moderated the impact of self-affirmation on negative affect, as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model, $\Delta F (1, 48) = 8.36$, $p = .006$, $\Delta R^2 = .15$. Simple slopes revealed that there was a significant effect of self-affirmation on negative affect when systematic processing was low, $\beta = .56$, $t(48) = -2.91$, $p = .005$ (Appendix A Figure 1), such that individuals in the self-affirmation condition reported greater negative affect compared to those in the control condition. There was no impact of the self-affirmation manipulation for those with mean, $\beta = -.23$, $t(48) = -1.20$, $p = .237$, or high levels of systematic processing, $\beta = .17$, $t(48) = 1.22$, $p = .230$.
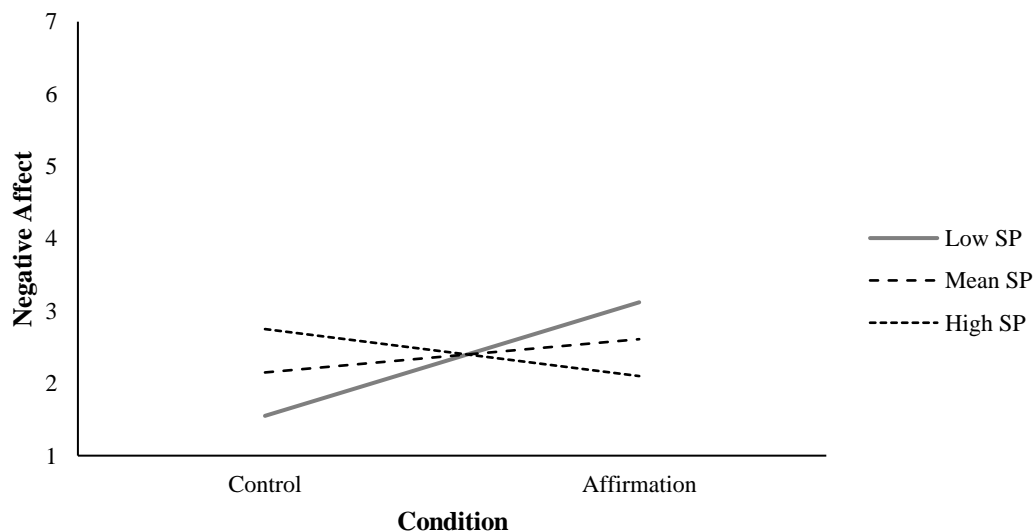
Appendix A Figure 1. Negative affect regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

Risk. Systematic processing moderated the impact of self-affirmation on risk, as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model, $\Delta F (1, 48) = 5.98$, $p = .018$, $\Delta R^2 = .10$. Simple slopes revealed that there was marginally significant effect of self-affirmation on risk

when systematic processing was low, $\beta = .38$, $t(48) = 1.20$, $p = .052$ (Appendix A Figure 2), such that individuals in the self-affirmation condition reported greater perceptions of risk compared to those in the control condition. There was no impact of the self-affirmation manipulation for those with mean, $\beta = .05$, $t(48) = 0.37$, $p = .715$, or high levels of systematic processing, $\beta = -.28$, $t(48) = -1.48$, $p = .146$.
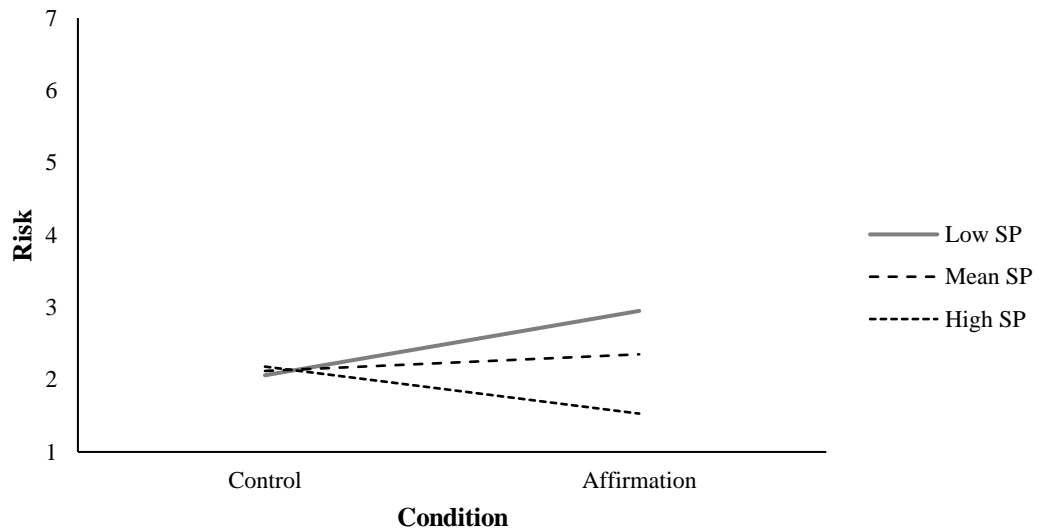
Appendix A Figure 2. Risk regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

Identity. Systematic processing moderated the impact of self-affirmation on identity, as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model, $\Delta F (1, 48) = 8.33$, $p = .006$, $\Delta R^2 = .14$. Simple slopes revealed that there was a significant effect of self-affirmation on identity when systematic processing was low, $\beta = .59$, $t(48) = 3.14$, $p = .003$ (Appendix A Figure 3), such that individuals in the self-affirmation condition reported stronger identity compared to those in the control condition. There was no impact of the self-affirmation manipulation for those with mean, $\beta = .05$, $t(48) = 0.37$, $p = .715$, or high levels of systematic processing, $\beta = -.18$, $t(48) = -0.97$, $p = .339$.
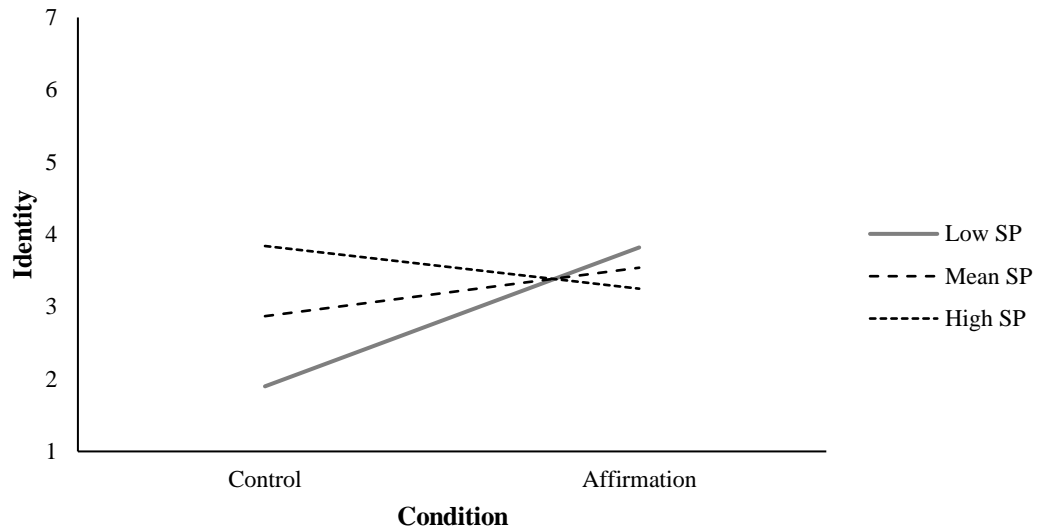
Appendix A Figure 3. Identity regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

Anticipated regret. Systematic processing moderated the impact of self-affirmation on anticipated regret, as evidenced by the fact that the interaction term (entered at step 3) significantly increased the variance accounted for by the model, ΔF $(1, 48) = 5.68$, $p = .021$, $\Delta R^2 = .10$. Simple slopes revealed that there was a significant effect of self-affirmation on anticipated regret when systematic processing was low, $\beta = .47$, $t(48) = -2.42$, $p = .019$ (Appendix A Figure 4), such that individuals in the self-affirmation condition reported greater anticipated regret compared to those in the control condition. There was no impact of the self-affirmation manipulation for those with mean, $\beta = -.19$, $t(48) = -0.97$, $p = .339$, or high levels of systematic processing, $\beta = .14$, $t(48) = 1.03$, $p = .307$.
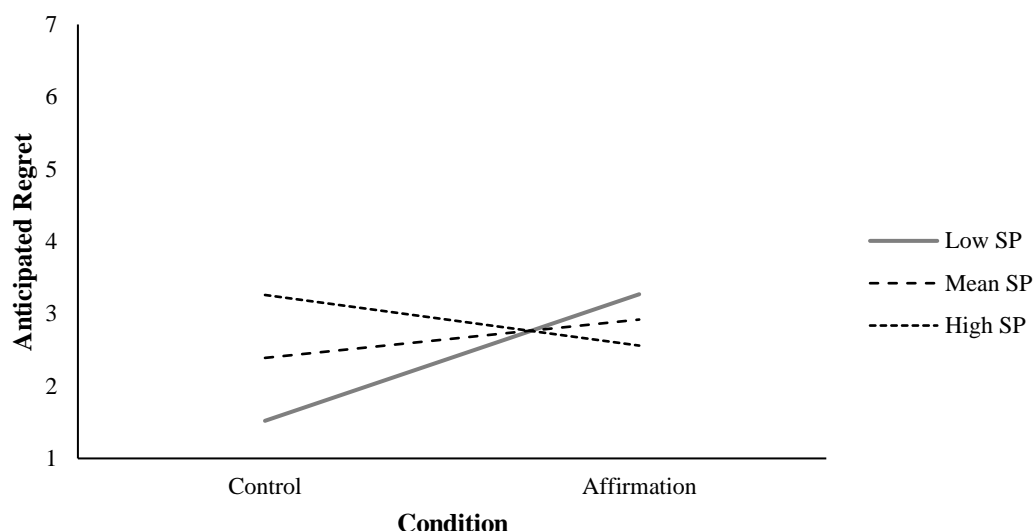
Appendix A Figure 4. Anticipated regret regressed onto condition for individuals with low, mean and high levels of systematic processing (SP).

Effects of self-affirmation and systematic processing on alcohol consumption at follow-up. Hierarchical multiple regression analysis was conducted to determine the effect of the self-affirmation manipulation, systematic processing and the interaction between these two variables on alcohol consumption at follow-up. Accordingly, the number of units of alcohol consumed in the previous 7 days at Time 1 was entered as a predictor at step 1, condition (dummy coded; control = 0, self-affirmation = 1) was entered as a predictor at step 2, mean-centred systematic processing scores were entered at step 3 and the interaction term between condition and systematic processing entered at step 4.

At step 1, baseline alcohol consumption significantly contributed to the prediction of participants' alcohol consumption at follow-up, $F(1, 49) = 30.81$, $p > .001$, $R^2 = .89$. However, the inclusion of condition (step 2), systematic processing (step 3) and the two-way interaction term (step 4) did not significantly increase the amount of variance explained by the model, (ΔR^2s < .001, ps > .84).

Discussion

There was no evidence in the current study that self-affirmation had any main effect on any of the outcome measure. However, these findings suggest that systematic processing moderated the impact of self-affirmation. Specifically, self-affirming low systematic processors resulted in greater reported negative affect, perceptions of risk and anticipated regret, as well as a stronger identity towards reducing alcohol consumption.

Study 2

Method

Design and Procedure

This study used a one-way between-subjects experimental design, with self-affirmation condition (self-affirmation vs. control) as the independent variable. Participants completed the Baseline and Time 1 measures, and experimental manipulations, in the same order as in Study 1; the Follow-up questionnaire was sent to participants after 7 days. Undergraduate students were recruited using the School of Psychology's participant database and were compensated with course credits. As in Study 1, all parts of the study were completed online. At Time 1, participants were randomly allocated to the affirmation or control condition by the host website, Survey Gizmo.

Participants

Sixty-seven female participants who met the inclusion criteria (i.e., they described their ethnicity as 'White') and who had completed the Baseline questionnaire responded to the Time 1 questionnaire 24 hours later. The mean age of the sample was 18.73 years ($SD = 0.90$; range $= 18 - 22$) and all of the participants were students. Sixty-six participants responded to the Follow-up questionnaire.

Materials

The Baseline Questionnaire, Time 1 Questionnaire and Follow-up Questionnaire used in this study were identical to those used reported in Chapter 2 (Study 2). The health information was the same as that used in Study 1.

Results

Preliminary Analyses

Tests of differential attrition between Time 1 and Follow-up were not conducted owing to low attrition ($n = 1$ drop-out), Preliminary analyses (one-way ANOVAs, chi-square) revealed there were no differences or association between conditions on baseline variables, ps > .115.

Main Analyses

Effects of self-affirmation and systematic processing on indices of openness to health information and cognitive indicators of behaviour change. A series of hierarchical regression analyses identical to those conducted in Study 1 explored whether (i) self-affirmation would have a main effect on each measure of open-minded responding to the health risk information and cognitions indicative of motivation to change behaviour and (ii) systematic processing would moderate the impact of self-affirmation on these outcomes. Resultant analyses are reported in the below tables. Analyses are only reported in the text below if they revealed either a significant main effect of self-affirmation, or significant interaction between self-affirmation and systematic processing.

Main effect of self-affirmation. There were main effects of self-affirmation (entered at step 1) on message derogation ($\text{ß} = .25$, $p = .04$) and risk ($\text{ß} = -.24$, $p = .05$): participants in the self-affirmation condition reported greater levels of message derogation and lower perceptions of risk than did those in the control condition.

Moderation by systematic processing. Analyses revealed that there was no evidence that systematic processing moderated the impact of self-affirmation on any outcome (entered at step 3).

Effects of self-affirmation and systematic processing on alcohol consumption at follow-up. Hierarchical multiple regression analyses identical to those conducted in Study 1 tested the effect of the self-affirmation manipulation, systematic processing and the interaction between condition and systematic processing on alcohol consumption at follow-up. At step 1, baseline alcohol consumption significantly contributed to the prediction of participants' alcohol consumption at follow-up, $F(1, 65)$ = 30.23, $p > .001$, $R^2 = .32$. However, the inclusion of condition (step 2), systematic processing (step 3) and the two-way interaction term (step 4) did not significantly increase the amount of variance explained by the model, (ΔR^2s $< .03$, ps $> .10$).

Discussion

The findings of the current study showed that self-affirmation a main effect on message derogation and risk, such that self-affirming (compared to not affirming) increased reported levels of message derogation as well as reducing perceptions of risk of breast cancer. There was no evidence that systematic processing moderated the impact of self-affirmation on any outcome measure.

Appendix A Table 3

Summary of Hierarchical Multiple Regression Analyses Predicting Indicators of Open-Minded Responding (Part 1) in Study 1

Variables entered	Message acceptance			Personal relevance			Message derogation			Counter-arguing		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	-.05	-.00	-.00	-.15	-.19	-.19	.02	-.02	-.03	.02	.03	.03
Systematic processing		.20	.30		-.17	-.20		-.36	-.20		.07	.09
Condition X Systematic processing			-.14			.03			-.08			.23
R^2	.003	.041	.051	.023	.052	.052	.001	.064	.067	.000	.005	.031
Model F	0.13	1.06	0.86	1.20	1.33	0.88	0.04	1.67	1.15	0.01	0.11	0.51
ΔR^2		.039	.009		.028	.000		3.30†	0.18		.004	.026
ΔF		1.20	0.48		1.46	0.02		.063	.003		0.21	1.29

†$p < .10$, *$p<.05$.

Appendix A Table 4

Summary of Hierarchical Multiple Regression Analyses Predicting Indicators of Open-Minded Responding (Part 2) in Study 1

Variables entered	Negative affect				Risk	
	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.16	.17	.17	.12	.05	.05
Systematic processing		.03	.42*		-.28	.05
Condition X Systematic processing			-.55*			-.46*
R^2	.025	.026	.170	.013	.085	.187
Model F	1.26	0.64	8.36**	0.68	2.29	3.67*
ΔR^2		.001	.145		.072	.101
ΔF		0.05	8.36**		3.86[†]	5.98*

[†]$p < .10$, *$p<.05$, **$p<.01$.

Appendix A Table 5

Summary of Hierarchical Multiple Regression Analyses Predicting Cognitions Indicative of Motivation to Change Behaviour in Study 1

Variables entered	Intention				Identity			Attitude			Anticipated regret		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	
Condition	.06	.06	.06	.15	.21	.21	-.16	-.08	-.08	.11	.14	.14	
Systematic processing		.01	.11		.21	.59*		.33*	.56*			.14	.47*
Condition X Systematic processing			-.13			-.53*			-.33†				-.46*
R^2	.003	.004	.012	.024	.028	.204	0.26	.126	.177	.012	.030	.133	
Model *F*	1.17	0.09	0.19	1.22	1.73	4.11	1.32	3.53	3.45	0.61	0.76	2.45†	
ΔR^2		.000	.008		.042	.138		.100	.051			.018	.103
ΔF		0.01	0.40		2.22	8.34**		5.62*	2.30†			0.91	5.68*

†*p* < .10, **p* <. 05

Appendix A Table 6

Summary of Hierarchical Multiple Regression Analyses Predicting Indicators of Open-Minded Responding (Part 1) in Study 2

Variables entered	Message acceptance			Personal relevance			Message derogation			Counter-arguing		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	-.06	-.00	-.01	-.08	-.02	-.02	.25*	-.21†	-.21†	.08	-.04	-.04
Systematic processing		-.36*	-.53†		-.36*	-.43*		-.26*	-.39†		-.27*	-.37†
Condition X Systematic processing			-.22			-.09			-.16			-.12
R^2	.003	.129	.146	.006	,131	.135	.064	.129	.138	.007	.079	.084
Model F	0.23	4.72*	3.60*	0.38	4.85*	3.27*	4.41*	4.74*	3.37*	0.46	2.75†	1.93
ΔR^2		.125	.018		.126	.003		.065	.009		.072	.005
ΔF		9.19**	1.31		9.26**	0.23		4.81*	0.67		5.01*	0.35

†$p < .10$, *$p <. 05$, **$p < .01$

Appendix A Table 7

Summary of Hierarchical Multiple Regression Analyses Predicting Indicators of Open-Minded Responding (Part 2) in Study 2

Variables entered	Negative affect			Risk		
	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	-.01	.03	-.03	-.24*	-.24[†]	-.24[†]
Systematic processing		.22	-.23		.05	-.00
Condition X Systematic processing			-.01			-.06
R^2	.059	.061	.063	.068	.116	.125
Model F	4.10*	2.09	1.41	4.72*	4.19*	3.00*
ΔR^2		.002	.001		.048	.009
ΔF		0.13	0.09		3.47[†]	0.68

[†]$p < .10$, *$p < .05$

Appendix A Table 8

Summary of Hierarchical Multiple Regression Analyses Predicting Cognitions Indicative of Motivations to Change Behaviour in Study 2

Variables entered	Intention			Identity			Attitude			Anticipated regret		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	-.08	-.05	-.06	-.06	-.01	-.02	-.04	-.00	-.01	.06	.10	-.09
Systematic processing		-.18	-.02		-.28*	.06		-.24†	-.10		.26*	-.03
Condition X Systematic processing			.25			.29			-.18			-.36†
R^2	.006	.037	.059	.003	.081	.111	.002	.057	.069	.002	.110	.127
Model F	0.41	1.23	1.32	0.19	2.84	2.63	0.10	1.95	1.55	0.16	3.95*	3.05*
ΔR^2		.031	.022		.079	.030		.056	.011		.107	.017
ΔF		2.05	1.49		5.74*	2.13		3.79†	0.77		7.71**	1.22

†$p < .10$, *$p < .05$

APPENDIX B: Materials Relating to Chapter 3

Supplemental Method for the Study Reported in Chapter 3

Design

The study employed a parallel, double blind experimental design, with an allocation ratio of 1:1. Participants were randomly allocated to either the self-affirmation or control conditions using the randomization function on the host website, Survey Gizmo. Dependent measures assessed message acceptance and narrative engagement. Reported alcohol consumption was assessed at follow-up after 7 days. Using G Power (version 3.1), a sample size of 128 was required for power of 0.8. Data were collected between October and December 2014.

Materials

Participants completed a series of questionnaires at two time points. The first page of each questionnaire gave instructions regarding consent and ethics.

Baseline alcohol intake. Using Armitage, Harris, and Arden's (2011) adapted version of the timeline fallback technique (Sobell & Sobell, 1992), participants indicated how much alcohol they had consumed within the past 7 days. In particular, they were asked to report the type of alcohol they had consumed (i.e., beer, wine, spirit), what type of container it was in (i.e., small glass, can, pint, single or double measure) and the number of each of these drinks they had consumed on each day in the past week. The total number of units consumed by each participant was then calculated using the UK NHS alcohol unit calculator (NHS Choices, 2013).

Dependent measures. Responses to all items were given on 7-point scales with corresponding anchors (e.g., *strongly disagree* [1] to *strongly agree* [7]), unless otherwise indicated. Items were amended to refer to alcohol as appropriate. A mean

score was calculated for each participant on each measure, with higher scores indicating greater levels of that measure.

Message acceptance. The first set of dependent measures comprised various indices of message acceptance. *Personal relevance* was measured using two items Napper, Harris, and Epton (2009), e.g., "The information was relevant to me", $r(141)$ = .70, $p < .001$. *Message credibility* was measured with seven items (α = .84), two assessing message acceptance (Harris & Napper, 2005), e.g., "how believable did you find the content of the video?", two assessing message derogation (Ruiter, Verplanken, Kok, & Werrij, 2003), e.g., "the video was distorted", and three assessing counter-arguing (Silvia, 2006), e.g., "While watching the video, I was criticizing it". *Negative affect* was measured by two items (Griffin & Harris, 2011), e.g., "How much did the video make you feel tense?", $r(141)$ = .77, $p < .001$. *Perceived risk* of developing liver disease (α = .87) was assessed by combining two items (Janssen, Van Osch, De Vries, & Lechner, 2012), e.g., "If I don't reduce the amount of alcohol I drink, I feel that my chances of getting liver disease at some point in my life are..." (*very small* [1] to *very big* [7]), and two items (Napper et al., 2009), e.g., "If I don't cut down on my alcohol consumption, I will feel very vulnerable to liver disease". *Attitudes* (α = .74) were measured using six items (Abraham & Sheeran, 2004), e.g., "For me to reduce the amount of alcohol I drink would be…" (*unimportant* [1], *important* [7]). *Anticipated regret* was measured with two items (Conner, Godin, Sheeran, & Germain, 2013), e.g., "If I did NOT reduce the amount of alcohol I drink, I would regret it", $r(141)$ = .97, $p < .01$. *Intentions* were measured with two items (Harris & Napper, 2005), e.g., "I intend to reduce the amount of alcohol I drink", $r(141)$ = .99, $p < .01$.

Narrative engagement. We measured four aspects of engagement with the narrative information: *Ease of visualization* with two items (Harris & Napper, 2005),

e.g., "How easy is it for you to IMAGINE yourself developing liver disease if you continue with your current level of alcohol consumption?" (*Not easy at all* [1] to *very easy* [7]), $r(141) = .69$, $p < .01$, *Narrative emotion* using three items (Green & Brock, 2000), e.g., "The video affected me emotionally", $\alpha = .93$, *Narrative attention* with three items (Green & Brock, 2000), e.g., "While I was watching the video my attention was fully captured by it", $\alpha = .84$, and *Perspective taking* using three items (Cohen, 2001), e.g., "While I was watching the video I imagined what it would be like to be in Jo's position", $\alpha = .84$.

Questionnaires Referred to in Chapter 3

Baseline Questionnaire

Alcohol Study - Part 1

Thank you for agreeing to take part in this study.

This questionnaire is the first part of a three-part study. After completing this part, you will be asked to book a slot to come into the experimental labs to complete the second part. Seven days after this, you will be contacted via email to complete the final questionnaire online.

In this first questionnaire you will be asked some questions concerning your thoughts and beliefs about yourself and others. This questionnaire should take around 10 minutes to complete.

In total, you will receive 4 course credits for taking part. You will be awarded 1 course credit for completing this questionnaire, 1 course credit for completing Time 2, and 2 course credits for completing Time 3.

You are welcome to take part if you are:

Aged 18 or over

Able to read and write in English

PLEASE NOTE:

This study has been reviewed by the Sciences and Technology Cross-Schools Research Ethics Committee (crecscitec@sussex.ac.uk) and has been approved.

Your answers will be confidential.

You are under no obligation to take part in this study.

You are under no obligation to take part in this study. Participation is purely voluntary and you are free to withdraw at any time, without giving a reason, until it is no longer practical for you to do so. Thus, this will only be possible up to the final phase of the study at which data analysis will commence, which shall be approximately one month after you have taken part.

Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards.

Please read the instructions carefully and answer the questions in the order they appear on the page.

You will not be able to return to a page once you have clicked the continue button.

If you wish to take part, please complete the consent form below.

CONSENT FORM
Please select your choice below.

1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:

You have read the above information
You voluntarily agree to participate
You are 18 years of age or over

If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree
( ) Disagree

_____

Background information

2) Please enter today's date. (NOTE: date will appear in MM/DD/YYYY format)
_____

3) Please enter your email address below (so we can contact you to take part in the second and final part of the study).
Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.
_____

4) Please write your name below.
_____

5) Are you male or female?
( ) Male
( ) Female

6) Please enter your age.
_____

7) What subject are you studying?
_____

8) What year of study are you in?
( ) First year
( ) Second year

9) Which of the following best describes your ethnicity? (Please tick one of the following).
( ) White   ( ) Mixed   ( ) Asian or Asian British   ( ) Black or Black British
( ) Chinese   ( ) Other Ethnic Group   ( ) Prefer not to say

10) What is your nationality?
_____

11) Do you drink alcohol?
( ) No
( ) Yes

In this section we'd like to ask you about your thoughts and feeling about yourself.

Please note, there are no right or wrong answers to any of the questions. We are interested only in finding out what YOU think and feel.

12) When we think of ourselves, our thoughts are sometimes negative and sometimes positive. We are interested in the POSITIVE thoughts you have about yourself.

Please indicate how much you agree or disagree with each of the following statements.

Thinking POSITIVELY about myself is something…

	Disagree completely 1	2	3	4	5	6	Agree completely 7
… I do automatically.							
… that feels sort of natural to me.							
… I do without further thinking.							
… I would find hard not to do.							
… that's typically "me".							

In this questionnaire we are interested in how you respond to things that make you feel anxious or threatened.

Sometimes when we face difficulties, challenges or problems in our daily lives we think about ourselves. We are interested in how often you tend to think about yourself when things start to bother you.

13) When I feel threatened or anxious by people or events I find myself...

	Disagree completely 1	2	3	4	5	6	Agree completely 7
… thinking about my strengths.							
… thinking about my values.							
… thinking about my principles.							
… thinking about my family.							
… thinking about what I stand for.							
… thinking about my friends.							
… thinking about the things that I am good at.							
… thinking about the things that I like about myself.							
… thinking about my failings.							
… thinking about the people I love.							

Below is a list of statements dealing with your general feelings about yourself. For each of the following statements, please indicate how strongly you agree or disagree.

14) I am able to do things as well as most other people.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

15) I feel that I am a person of worth, at least on an equal basis with others.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

16) I certainly feel useless at times.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

17) I take a positive attitude towards myself.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

18) At times I think I'm no good at all.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

19) On the whole, I am satisfied with myself.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

20) I feel as if I have number of good qualities.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

21) I feel I do not have much to be proud of.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

22) I wish I could have more respect for myself.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

23) All in all, I am inclined to think I am a failure.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Strongly agree

24) I have high self-esteem.
Not very true of me ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Very true of me

Next we'd like to ask you about your thoughts and feelings in general towards others.

Please indicate how well each of the following statements describes you.

25) I often have tender, concerned feelings for people less fortunate than me.
Does not describe me well ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Does describe me well

26) Sometimes I don't feel very sorry for other people when they are having problems.
Does not describe me well ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Does describe me well

27) When I see someone being taken advantage of, I feel kind of protective towards them.
Does not describe me well ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Does describe me well

28) Other people's misfortunes do not usually disturb me a great deal.
Does not describe me well ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Does describe me well

29) When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
Does not describe me well ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Does describe me well

30) I am often quite touched by things that I see happen.
Does not describe me well ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Does describe me well

31) I would describe myself as a pretty soft-hearted person.
Does not describe me well   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Does describe me well

---

Now we'd like to ask you about your thoughts about alcohol and how you typically respond when you come across information about the health risks of alcohol consumption.

The following statements represent different ways that people personally deal with information that they come across in the mass media and other places about the health risks of alcohol consumption. For each statement, please indicate how strongly you agree or disagree.

32) After I encounter information about the health risks of alcohol consumption, I am likely to stop and think about it.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

33) If I need to act on the health risks of alcohol consumption, the more viewpoints I get the better.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

34) After thinking about the health risks of alcohol consumption, I have a broader understanding.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

35) When I encounter information about the health risks of alcohol consumption, I read or listen to most of it, even though I may not agree with its perspective.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

36) It is important for me to interpret information about the health risks of alcohol consumption in a way that applies directly to my life.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

37) When I encounter information about the health risks of alcohol consumption, I focus on only a few key points.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

38) There is far more information on the health risks of alcohol consumption than I personally need.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

39) When I see or hear information about the health risks of alcohol consumption, I rarely spend much time thinking about it.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

40) If I need to act on information about the health risks of alcohol consumption, the advice of one expert is enough for me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

---

41) Overall my attitude towards drinking alcohol is…

Extremely negative   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Extremely positive

42) Overall my attitude towards drinking alcohol is…
Extremely unfavourable( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7Extremely favourable

---

Thank You!

Thank you very much for taking the time to complete this questionnaire.

Please now follow the link below to choose a time slot where it's convenient for you to come to the lab and complete the second part of the study.

[Insert link]

If you don't choose a time slot now, I will be in contact later using the email address you provided at the start of the questionnaire to arrange a convenient time for you.

If you have any questions about the study at this stage, please don't hesitate to contact me (Kerry Fox) via email (K.J.Fox@sussex.ac.uk).

Time 1 Questionnaire

Alcohol Study - Part 2

Thank you for agreeing to take part in this study.

This is the second part of our three-part study. Initially, you will be asked to answer some questions about your alcohol consumption and your values. You will then be asked to a watch a video about someone with liver disease and give your responses to it. This should take no more than 30 minutes to complete. give your responses to this. This questionnaire should take no more than 30 minutes to complete.

The third and final questionnaire will be sent to you via email 7 days after you complete this part.

In total, you will receive 4 course credits for taking part. You will have already been awarded 1 course credit for completing Time 1 and you will get a further 1 course credit for completing Time 2, and a further 2 course credits for completing Time 3.

You are welcome to take part if you are:

Aged 18 or over

Able to read and write in English

PLEASE NOTE:

This study has been reviewed by the Sciences and Technology Cross-Schools Research Ethics Committee (crecscitec@sussex.ac.uk) and has been approved.

Your answers will be confidential.

You are under no obligation to take part in this study. Participation is purely voluntary and you are free to withdraw at any time, without giving a reason, until it is no longer practical for you to do so. Thus, this will only be possible up to the final phase of the

study at which data analysis will commence, which shall be approximately one month after you have taken part.

Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onward.

Please read the instructions carefully and answer the questions in the order they appear on the page.

You will not be able to return to a page once you have clicked the continue button.

If you wish to take part, please complete the consent form below.

Consent form
Please select your choice below

1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:
You have read the above information
You voluntarily agree to participate
You are 18 years of age or over
If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree
( ) Disagree

Background information
2) Please enter today's date. (NOTE: date will appear in MM/DD/YYYY format)
_____

3) Please enter your email address below (so we can contact you to take part in the final part of the study. Please provide the same e-mail address as in the previous questionnaire).

Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.
_____

4) Please write your name below.
_____

Alcohol consumption
First, we'd like to ask you some questions about your alcohol consumption.

5) In the last 7 days, how much alcohol did you drink? Below, please could you detail the types of drinks (i.e., beer, wine, spirits), types of containers (i.e., small glass, can, pint, single or double measure), and number of each of these drinks consumed on each day of a typical 7 days.

An example would be: 1 can of Stella, 1 bottle of Smirnoff Ice.

	Alcohol consumed
Monday	_____
Tuesday	_____
Wednesday	_____
Thursday	_____
Friday	_____
Saturday	_____
Sunday	_____

SELF-AFFIRMATION CONDITION:

Ranking of personal values
In this section we are interested in investigating people's values. By values we mean the moral principles and standards by which people try to live their lives. For example, honesty might be a core value for some people. That is, they may try to be honest in all they do - whether in dealing with other people or when studying or working. Following are some personal values that other people have described as important to them.

Conscientiousness
Spirituality/religiousness
Compassion
Intelligence
Generosity
Trustworthiness
Creativity
Hedonism (the pursuit of pleasure)
Friendliness
Kindness
Spontaneity

6) Please select the value that is MOST important to YOU, and write it in the space provided below. Please note, this value does NOT have to appear on the list above. The MOST important value to me is...

_____

7) Why is this value important to YOU?

Please write THREE reasons why this value is important to you and ONE example of something you've done to demonstrate how important it is to you**.**

	.
Reason 1	_____
Reason 2	_____
Reason 3	_____
Example	_____

CONTROL CONDITION:

Ranking of personal values

In this section we are interested in investigating people's values. By values we mean the moral principles and standards by which people try to live their lives. For example, honesty might be a core value for some people. That is, they may try to be honest in all they do - whether in dealing with other people or when studying or working. Following are some personal values that other people have described as important to them.

Conscientiousness
Spirituality/religiousness
Compassion
Intelligence
Generosity
Trustworthiness
Creativity
Hedonism (the pursuit of pleasure)
Friendliness
Kindness
Spontaneity

6) Please select the value that is LEAST important to YOU, and write it in the space provided below. Please note, this value does NOT have to appear on the list above. The LEAST important value to me is...
_____

7) Why might this value be important to SOMEONE ELSE?

Please write THREE reasons why you think this value might be important to SOMEONE ELSE and ONE example of something someone else might do to demonstrate how important it is to them.

	.
Reason 1	_____

Reason 2	_____
Reason 3	_____
Example	_____

---

8) How important to you is the value that you selected to write about?
Extremely unimportant ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Extremely important

Please indicate to what extent the following words describe how you currently feel, that is how you feel RIGHT NOW.

9) RIGHT NOW I feel LOVING towards other people.
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very much

10) RIGHT NOW I feel COMPASSIONATE towards other people.
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very much

11) RIGHT NOW I feel CONNECTED to other people.
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very much

12) RIGHT NOW I feel EMPATHY towards other people.
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very much

13) RIGHT NOW I feel HAPPY.
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very much

14) RIGHT NOW I feel SAD.
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very much

---

15) Please now watch this video, which tells the story of someone with liver disease. When you are finished watching this video close the new window and return to the survey window.

PLEASE REMEMBER TO CLOSE ONLY THE WINDOW AND NOT THE ENTIRE BROWSER WHEN YOU ARE FINISHED READING THE INFORMATION!
[ ] Please tick to confirm you have watched the video and closed the window.

---

16) What was the name of the person in the video you just watched?
_____

17) Please state the disease that the person in the video had.
_____

We are interested in your thoughts and feelings about the video you have just watched.

18) Overall, how believable did you find the content of the video?
Unbelievable   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Believable

19) Overall, how convincing did you find the content of the video?
Unconvincing   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Convincing

20) The video was relevant to me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

21) How much did the video make you feel tense?
Not at all tense   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very tense
22) The video was distorted.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

23) The video was exaggerated.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

24) How much did the video make you feel anxious?
Not at all anxious   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very anxious

25) Please indicate which of the following applied to you WHILE you were watching the video.

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
I felt fearful.							
I felt irritated.							
I felt angry.							
I felt annoyed.							
I felt agitated.							

WHILE watching the video...

26) ...I thought about how the video was personally relevant to me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

27) ...I was criticising the video.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

28) ...I was thinking of points that went against the video's arguments.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

29) ...I was feeling sceptical of the video's arguments.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

---

Please indicate which of the following applied to you WHILE you were watching the video.

30) I thought about what actions I myself might take based on what I watched.
Completely disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

31) I found myself making connections between the video and what I've read or heard about elsewhere.
Completely disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

32) I thought about how the video related to other things I know.
Completely disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

33) I tried to think about the importance of the video for my daily life.
Completely disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

34) I tried to relate the ideas in the video to my health.
Completely disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

35) I hardly paid attention to the video.
Completely disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

36) I did not spend much time thinking about the video.
Completely disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

37) While watching the video I did not think about the arguments presented.
Completely disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

38) The video did not contain useful information on which I based my decision.
Completely disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

39) The video contained too many conflicting viewpoints.
Completely disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Completely agree

---

To what extent do you agree with the following statements?

40) I am worried about my current level of alcohol consumption.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

41) If I don't cut down on my alcohol consumption, I will feel very vulnerable to liver disease.

Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

42) I worry about the consequences of my current level of alcohol consumption.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

43) How easy is it for you to IMAGINE yourself developing liver disease if you continue with your current level of alcohol consumption?
Not easy at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very easy

44) How likely do you think YOU are to develop liver disease if you continue with your current level of alcohol consumption?
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very likely

45) How easy is it for you to VISUALISE yourself developing liver disease if you continue with your current level of alcohol consumption?
Not easy at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very easy

---

Next, we'd like to ask for your thoughts and feelings about reducing the amount of alcohol you drink in the next 7 days, *by at least 2 units*.
Remember, 2 units of alcohol is approximately a standard 175ml glass of wine (12%), an ordinary strength pint of lager, bitter or cider (3-4%) or a small double measure of spirits (2 x 25ml at 40%).

46) I intend to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Definitely do not intend to ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Definitely intend to

47) Do you intend to reduce the amount of alcohol you drink in the next 7 days by at least 2 units?
Definitely do not intend to ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Definitely intend to

48) I think of myself as the sort of person who would want to reduce the amount of alcohol I drink in the next 7 days by at least 2 units .
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

49) Reducing the amount of alcohol I drink in the next 7 days by at least 2 units is an important part of who I am.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

50) I am the type of person who would reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

51) I would feel regret if I did NOT reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

52) If I did NOT reduce the amount of alcohol I drink in the next 7 days by at least 2 units I would feel regret.

Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

53) Do you expect that you will reduce the amount of alcohol you drink in the next 7 days by at least 2 units?
I definitely will not   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 I definitely will

54) In the next 7 days, how likely is it that you will reduce your alcohol consumption by at least 2 units?
Not at all likely   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Very likely

55) For me to reduce the amount of alcohol I drink in the next 7 days by at least 2 units would be
Unimportant   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Important

56) For me to reduce the amount of alcohol I drink in the next 7 days by at least 2 units would be
Harmful   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Beneficial

57) For me to reduce the amount of alcohol I drink in the next 7 days by at least 2 units would be
Worthless   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Valuable

58) For me to reduce the amount of alcohol I drink in the next 7 days by at least 2 units would be
Unpleasant   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Pleasant

59) For me to reduce the amount of alcohol I drink in the next 7 days by at least 2 units would be
Unenjoyable   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Enjoyable

60) For me to reduce the amount of alcohol I drink in the next 7 days by at least 2 units would be
Boring   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Exciting

61) If I do NOT reduce the amount of alcohol I drink in the next 7 days by at least 2 units, I feel that my chances of getting liver disease at some point in my life are...
Very small   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Very big

62) If I do NOT reduce the amount of alcohol I drink in the next 7 days by at least 2 units, I would feel vulnerable to getting liver disease at some point in my life.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

63) If I did NOT reduce the amount of alcohol I drink in the next 7 days by at least 2 units, it would bother me.
Very unlikely   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Very likely

64) If I did NOT reduce the amount of alcohol I drink in the next 7 days by at least 2 units, I would regret it.
Very unlikely   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Very likely

65) If I reduced the amount of alcohol I drink in the next 7 days by at least 2 units, I would feel proud.
Very unlikely ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very likely

66) If I reduced the amount of alcohol I drink in the next 7 days by at least 2 units, I would be happy.
Very unlikely ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very likely

67) It would be easy for me to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

68) For me to reduce the amount of alcohol I drink in the next 7 days by at least 2 units would be...
Very difficult ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very easy

I am confident that I can reduce the amount of alcohol I drink in the next 7 days by at least 2 units...

69) ...even if I find myself in situations in which this might be difficult.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

70) ...even when things are not going well for me.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

---

Please now think back to the video you were asked to watch earlier. Please answer the following questions about that video as honestly as possible.

71) While I was watching the video my attention was fully captured by it.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

72) While I was watching the video I forgot about the world around me.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

73) While I was watching the video, I was fully concentrating on it.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

74) The video affected me emotionally.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

75) I found the video moving.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

76) While I was watching the video, it touched my emotions.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

77) While I was watching the video, I imagined what it would be like to be in Jo's position.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

78) While I was watching the video, I put myself in Jo's position.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

79) While I was watching the video, I pictured what it would be like for Jo to experience having liver disease.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

---

Please now think back to the task you were asked to complete near the start of this questionnaire, when we asked you to choose and write about personal values. We would like to ask you about your experiences of completing that task.

80) The task about values made me think about...
Things I don't like about myself   Things I like about myself
                        ( ) 3   ( ) 2   ( ) 1   ( ) 0   ( ) 1   ( ) 2   ( ) 3

81) The task about values made me think about...
Things I'm bad at   Things I'm good at
                        ( ) 3   ( ) 2   ( ) 1   ( ) 0   ( ) 1   ( ) 2   ( ) 3

82) The task about values made me think about...
Things I don't value about myself   Things I do value about myself
                        ( ) 3   ( ) 2   ( ) 1   ( ) 0   ( ) 1   ( ) 2   ( ) 3

Doing the task about values made me aware of...
83) ...Who I am.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

84) ...My values (the principles and standards by which I try to live my life).
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

85) Please select one answer for each of the following statements:-

	Yes	No
Have you ever been diagnosed as having liver disease?		
Is there a history of liver disease in your family?		
Have any of your friends ever been diagnosed as having liver disease?		

Thank You!

Thank you very much for taking the time to complete this part of the study.

In a week's time you will receive an e-mail with a web link to the final questionnaire. Please try to complete the questionnaire as soon as you receive that email.

If you have any questions about the study so far, please contact me (Kerry Fox) person at the end of this session or via email (K.J.Fox@sussex.ac.uk).

If you would like more information about how to decrease the amount you alcohol you drink or more information on liver disease, you may find the following websites useful:

Drinkaware (Advice on how to reduce your alcohol consumption): www.drinkaware.co.uk/make-a-change/how-to-cut-down/

NHS Choices (alcohol): www.nhs.uk/livewell/alcohol/Pages/Alcoholhome.aspx

NHS Choices (alcohol and liver disease): www.nhs.uk/conditions/liver_disease_(alcoholic)/Pages/Introduction.aspx

Drinkaware (alcohol and liver disease): www.drinkaware.co.uk/check-the-facts/health-effects-of-alcohol/effects-on-the-body/alcohol-and-your-liver

NHS Choices (symptoms of liver disease): www.nhs.uk/Conditions/Liver_disease_(alcoholic)/Pages/Symptoms.aspx

If you would like more information about what services are available to you if you are worried about your levels of alcohol consumption or risk of liver disease, you may find the following websites useful:

NHS Services: www.nhs.uk/Service-Search/

University of Sussex Services: www.sussex.ac.uk/wellbeing/alcoholdrugsandsmoking/alcohol

---

Follow-up Questionnaire

Alcohol Study - Part 3

Thank you for agreeing to take part in this study.

This questionnaire is the third and final part of our study. In it you will be asked to answer a few further questions about your alcohol consumption. This questionnaire should take no more than 10 minutes to complete.

Participants who complete this questionnaire will be awarded a further 2 course credits! You have already earned 1 credit for completing Time 1 and 1 credit for completing Time 2.

You are welcome to take part if you are:

Aged 18 or over

Able to read and write in English

PLEASE NOTE:

This study has been reviewed by the Sciences and Technology Cross-Schools Research Ethics Committee (crecscitec@sussex.ac.uk) and has been approved.

Your answers will be confidential.

You are under no obligation to take part in this study. Participation is purely voluntary and you are free to withdraw at any time, without giving a reason, until it is no longer practical for you to do so. Thus, this will only be possible up to the final phase of the study at which data analysis will commence, which shall be approximately one month after you have taken part.

Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards.

Please read the instructions carefully and answer the questions in the order they appear on the page.

You will not be able to return to a page once you have clicked the continue button.

If you wish to take part, please complete the consent form below.

Consent form

Please select your choice below

1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:
You have read the above information
You voluntarily agree to participate
You are 18 years of age or over
If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.

( ) Agree
( ) Disagree

_____

Background information

2) Please enter today's date. (NOTE: date will appear in MM/DD/YYYY format)
_____

3) Please enter your email address below (Please provide the same email address as in the previous questionnaire).

Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.
_____

4) Please write your name below.
_____

_____

First, we'd like to ask you some questions about your alcohol consumption over the last 7 days.

5) In the last 7 days, how much alcohol did you drink? Below, please could you detail the types of drinks (i.e., beer, wine, spirits), types of containers (i.e., small glass, can,

pint, single or double measure), and number of each of these drinks consumed on each day of a typical 7 days.

An example would be: 1 can of Stella, 1 bottle of Smirnoff Ice.

	Alcohol consumed
Monday	_____
Tuesday	_____
Wednesday	_____
Thursday	_____
Friday	_____
Saturday	_____
Sunday	_____

6) I have reduced the amount of alcohol I have drunk in the past 7 days by at least 2 units.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

7) I have reduced the amount of alcohol I have drunk in the past 7 days by at least 2 units.
Definitely have not ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Definitely have

8) Over the past 7 days I have ...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
... constantly monitored myself to see whether I have reduced the amount of alcohol I drink by at least 2 units.							
... watched carefully that I have reduced the amount of alcohol I drink by at least 2 units.							

... often had the intention to reduce the amount of alcohol I drink by at least 2 units.							
... always been aware that I needed to reduce the amount of alcohol I drink by at least 2 units.							
... really tried to reduce the amount of alcohol I drink by at least 2 units.							
... tried my best to act in accordance with my standards.							

Next, we'd like to ask for your thoughts and feelings about reducing the amount of alcohol you drink in the next 7 days, *by at least 2 units*.
Remember, 2 units of alcohol is approximately a standard 175ml glass of wine (12%), an ordinary strength pint of lager, bitter or cider (3-4%) or a small double measure of spirits (2 x 25ml at 40%).

9) I intend to reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Definitely do not intend to ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Definitely intend to

10) Do you intend to reduce the amount of alcohol you drink in the next 7 days by at least 2 units?
Definitely do not intend to ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Definitely intend to

11) I think of myself as the sort of person who would want to reduce the amount of alcohol I drink in the next 7 days by at least 2 units .
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

12) Reducing the amount of alcohol I drink in the next 7 days by at least 2 units is an important part of who I am.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

13) I am the type of person who would reduce the amount of alcohol I drink in the next 7 days by at least 2 units.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

I am confident that I can reduce the amount of alcohol I drink in the next 7 days by at least 2 units...
14) ...even if I find myself in situations in which this might be difficult.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

15) ...even when things are not going well for me.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

---

Thank you, that brings us to the end of this study which comprised of three questionnaires. We would now like you to ask you some questions about this study.

16) What do you think the purpose of this study was?
_____

17) Did you think the tasks were related in any way?
( ) Yes
( ) No

18) If yes, can you tell us something about how?
_____

19) Do you feel that your responses on any of the later tasks were influenced by your response to an earlier task?
( ) Yes
( ) No

20) If yes, can you tell us something about how?
_____

21) Have you completed any of the tasks on the three questionnaires before?
( ) Yes
( ) No

22) If yes, can you briefly describe which one and when.
_____

23) Do you think this affected your responses today in any way?
_____

Thank You!

Final Page

Thank you very much for taking the time to complete this questionnaire.

This study was designed to explore whether health information about the risks of alcohol consumption presented as a video would influence your responses to it. Every participant was shown the same video.

We were also interested in exploring whether writing about a personally important value would influence responses to the video. Therefore some of you were asked to write about an important value before watching the video and some of you were asked to write about an unimportant value. You all then answered the same questions about alcohol.

In addition, we were interested in exploring how your personal traits might influence your responses to the information about alcohol. Therefore, the first questionnaire asked you a number of questions designed to assess your personal traits.

If you would like to withdraw your questionnaire now that you know the purpose of the study and/or you would like more information about this study, please contact me (Kerry Fox) via email (K.J.Fox@sussex.ac.uk)

If you would like more information about how to decrease the amount you alcohol you drink you may find the following websites useful:

Drinkaware (Advice on how to reduce your alcohol consumption): www.drinkaware.co.uk/make-a-change/how-to-cut-down/

NHS Choices (alcohol): www.nhs.uk/livewell/alcohol/Pages/Alcoholhome.aspx

NHS Choices (alcohol and liver disease): www.nhs.uk/conditions/liver_disease_(alcoholic)/Pages/Introduction.aspx

Drinkaware (alcohol and liver disease): www.drinkaware.co.uk/check-the-facts/health-effects-of-alcohol/effects-on-the-body/alcohol-and-your-liver

NHS Choices (symptoms of liver disease): www.nhs.uk/Conditions/Liver_disease_(alcoholic)/Pages/Symptoms.aspx

If you would like more information about what services are available to you if you are worried about your levels of alcohol consumption or risk of liver disease, you may find the following websites useful:

NHS Services: www.nhs.uk/Service-Search/

University of Sussex Services: www.sussex.ac.uk/wellbeing/alcoholdrugsandsmoking/alcohol

Details of Narrative Health Video

Overview

The narrative health video used in this study in 3 minutes and 37 seconds long has been taken from a recent BBC Three documentary, Cherry Healey: Old before my time – Alcohol. The full documentary can be accessed on YouTube: https://www.youtube.com/watch?v=v6vEe6eenpg

For this study, we have extracted 'Jo's Story' which starts 9 minutes and 2 seconds into the documentary and ends 12 minutes and 34 seconds in. Participants will only be shown this part of the documentary, which lasts 3 minutes and 37 seconds

Jo is in her mid-30's and has liver disease as a result of her alcohol consumption. The video begins with the narrator explaining that liver disease is becoming increasingly common in the under 30's. Then, Jo speaks to camera about her liver disease. She explains that her stomach has swelled with excess fluid as a consequence of her liver not functioning properly and that people sometimes think she is pregnant. The video then shows Jo in hospital where she is being interviewed while having a routine drain of the excess fluid from her stomach. The clip concludes with an interview with Jo's nurse who explains that she is seeing an increasing number of younger people with alcohol-related liver disease.

Full transcript of 'Jo's Story'

Narrator: Seeing alcohol ravaged organs is one thing but there are thousands of young people in the UK struggling to live with these alcohol-related conditions. One of Ste's [the liver specialist that the narrator was speaking to before this section] patients is Jo from Middlesbrough. In her 20's, Jo was surrounded by booze all day every day while working behind a bar. Over the past 5 years her drinking spiralled out of control and it has had a startling effect on her body.

Jo: It's the strangest looking thing because I've got these scrawny arms at the top and suddenly it just goes 'gloop' [Jo here is referring to an enlarged stomach.]

Narrator: Jo is suffering from cirrhosis of the liver and a common side-effect is this extreme fluid retention known as ascites.

Jo: I mean it is incredibly tight. You can see all the veins stand out as well and I've had two different people in two different places smile and look at me and go 'are you due soon?' or I've had people give up their seats for me on the bus and sometimes it's just like, I don't know, 'have you got like two hours where I can stand and explain why I'm like this' but instead I just sort of laugh and go 'hmmm' and waddle off.

Narrator: Every three weeks, Jo has to be admitted to the James Cook University Hospital to get the excess fluid drained off. Dr Craig has to pierce Jo's skin and hit the right spot with a catheter to get the largest quantity of fluid out.

Dr Craig: I'd expect maybe about 12 litres in total and that will drain fairly rapidly to begin with then we would expect over 6-8 hours we would expect the full volume to be removed.

Jo: I think I'll beat 12. I reckon about 14. Its just a relief, you can just feel it the pressure just…[gestures sweepingly down her stomach as if to indicate the fluid is leaving]

Narrator: Sister Janet will be monitoring the exact amount of fluid Jo loses.

Sister Janet: We've been draining for about 5 minutes and we've nearly drained two litres.

Narrator: It might look like urine but the liquid is actually a mixture of nutrients and toxins that the healthy liver would process. And within just 2 hours, Jo's lost an astonishing 18 litres.

Jo: It's just all skin now. [referring to her stomach] Jelly belly!

Narrator: Jo's now sober but the damage that she did to her liver through alcoholism is irreversible.

Nurse Janet: She's got no quality of life at the moment. She'll get maybe a week at the most benefit from this drain and the fluid will start creeping up again and again. So walking for Jo is a problem. Getting down to put your pants on, basically, little things that we take for granted every single day. Jo can't do that.

Narrator: But if Jo hadn't stopped drinking her situation would be worse. Our hospitals have seen a 20% rise in deaths from alcohol related liver disease in just the last 10 years.

Nurse Janet: We are getting a lot of younger patients who have died through alcoholic liver disease and hearing a mother screaming that her 22 year old son has died is, will ring in my ears forever. It's awful.

Correlations between Dependent Variables for the Study Reported in Chapter 3

Appendix B Table 1

Correlations between Dependent Variables in the Study Reported in Chapter 3

	1	2	3	4	5	6	7	8	9	10	11
1. Personal relevance	1.00										
2. Message acceptance	.24**	1.00									
3. Negative affect	.61**	.14	1.00								
4. Risk	.51**	.06	.64**	1.00							
5. Attitude	.35**	.06	.38**	.39**	1.00						
6. Anticipated regret	.35**	-.03	.44**	.41**	.55**	1.00					
7. Intention	.07	-.03	.25**	.23**	.63**	.51**	1.00				
8. Ease of imagination	.41**	.13	.60**	.70**	.35**	.38**	.11	1.00			
9. Narrative emotion	.27**	.37**	.43**	.11	.24**	.18*	.20*	.15	1.00		
10. Narrative attention	.26**	.34**	.35**	.07	.21**	.19*	.16	.12	.40**	1.00	
11. Perspective taking	.25**	.12	.37**	.15	.08	.14	.09	.15	.39**	.19	1.00

*p < .01, *p <.001

Moderation Analysis for Chapter 3

Moderating Effect of Systematic Processing on the Impact of Self-Affirmation on Indices of Message Acceptance

A series of moderated regression analyses were conducted to determine whether systematic processing moderated any impact of self-affirmation on outcomes. For each analysis, condition (dummy coded; control = 0, self-affirmation = 1) was entered as a predictor at step 1, mean-centred systematic processing scores were entered at step 2 and the interaction term between condition and mean-centred systematic processing was entered at step 3. As can be seen from the tables below, analyses revealed no significant self-affirmation X systematic processing interaction on any outcome measure.

Moderating Effect of Systematic Processing on the Impact of Self-Affirmation on Reported Alcohol Consumption at Follow-Up

Hierarchical multiple regression analysis was conducted to determine whether systematic processing moderated any impact of self-affirmation on alcohol consumption at follow-up. Accordingly, the number of units of alcohol consumed in the previous seven days at Time 1 was entered as a predictor at step 1, condition (dummy coded; control = 0, self-affirmation = 1) was entered as a predictor at step 2, mean-centred systematic processing scores were entered at step 3 and the interaction term between condition and systematic processing entered at step 4.

As can be seen in the table below, baseline alcohol consumption (entered at step 1) significantly contributed to the prediction of participants' alcohol consumption at Follow-up, $F(1, 135) = 98.23$, $p < .001$, $R^2 = .421$. However, the inclusion of the two-way interaction term (step 4), did not significantly increase the amount of variance explained by the model.

Appendix B Table 2

Summary of Hierarchical Multiple Regression Analyses Predicting Message Acceptance (Part 1)

Variables entered	Personal relevance			Message acceptance			Negative affect			Risk		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.12	.12	.12	.00	.00	.00	.25**	.25**	.25**	.13	.13	.13
Systematic processing		.11	.18		.12	.13		.16*	.23*		-.03	-.06
Condition X Systematic processing			-.11			.04			-.10			.05
R^2	.014	.026	.033	.000	.011	.012	.064	.090	.096	.016	.017	.019
Model F	2.04	1.85	1.56	0.00	0.77	0.56	9.60**	6.89**	4.91**	2.27	1.21	0.87
ΔR^2		.012	.007		.011	.001		.026	.006		.001	.002
ΔF		1.65	0.99		1.54	0.16		3.97*	0.96		0.16	0.22

$^{\dagger}p < .10,$ $^{*}p <. 05,$ $^{**}p < .01$

Appendix B Table 3

Summary of Hierarchical Multiple Regression Analyses Predicting Message Acceptance (Part 2)

Variables entered	Attitudes			Anticipated regret			Intention		
	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.23**	.22**	.22**	.13	.12	.12	-.01	-.02	-.02
Systematic processing		.21**	.19†		.24**	.19†		.14	.10
Condition X Systematic processing			.03			.09			.06
R^2	.050	.095	.095	.017	.077	.081	.000	.019	.022
Model F	7.44**	7.29**	4.85**	2.41	5.76**	4.07**	0.02	1.37	1.01
ΔR^2		.044	.000		.060	.005		.019	.002
ΔF		6.83**	0.07		8.97**	0.70		2.73	0.30

†$p < .10,$ *$p <. 05,$ **$p < .01$

Appendix B Table 4

Summary of Hierarchical Multiple Regression Analyses Predicting Message Engagement

Variables entered	Ease of visualisation			Narrative emotion			Narrative attention			Perspective taking		
	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Condition	.16†	.16†	.16†	.20*	.19*	.19*	.01	.01	.01	.02	.01	.02
Systematic processing		.02	.02		.18*	.23*		.18	.18		.11	.22*
Condition X Systematic processing			.00			-.08			.01			-.17
R^2	.027	.027	.027	.038	.071	.074	.000	.033	.033	.000	.013	.029
Model F	3.85†	1.94	1.28	5.22*	5.29**	3.69*	0.02	2.38†	1.58	0.05	0.89	1.37
ΔR^2		.000	.000		.033	.004		.033	.000		.012	.016
ΔF		0.05	0.00		4.90*	0.55		4.73*	0.00		1.73	2.32

$^\dagger p < .10,$ *$p <. 05,$ **$p < .01$

Appendix B Table 5

Summary of Hierarchical Multiple Regression Analyses Predicting Alcohol Consumption at Follow-up

Variables entered	Alcohol intake at Follow-up			
	ß	ß	ß	ß
	Step 1	Step 2	Step 3	Step 4
Baseline alcohol intake[a]	.65**	.66**	.63**	.63**
Condition		-.09	-.08	-.08
Systematic processing			-.17**	-.09
Condition X Systematic processing				-.13
R^2	.421	.428	.456	.466
Model F	98.23**	50.21**	37.18**	28.85**
ΔR^2		.007	.028	.010
ΔF		1.69	6.78**	2.55

[a]Alcohol consumption measured in units per week.

$^{\dagger}p < .10, {}^*p <. 05, {}^{**}p < .01$

APPENDIX C: Materials Relating to Chapter 4

Questionnaires referred to in Chapter 4, Study 1

Time 1 Questionnaire

Exercise Study - Part 1

Thank you for agreeing to take part in this study.

This questionnaire is the first part of a two-part study and I shall be contacting you in one week's time to ask you some further questions.

In this first questionnaire, you will be asked to answer some questions about exercise and then be asked to read some information and to give your responses to this. This questionnaire should take around 20 minutes to complete.

Participants who complete both questionnaires will be entered into a prize draw with the chance of winning £50!

You are welcome to take part if you are:

Aged 18 or over

Able to read and write in English

PLEASE NOTE:

Your answers will be confidential.

You are under no obligation to take part in this study.

Participation is purely voluntary and you are free to withdraw at any time.

Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards.

Please read the instructions carefully and answer the questions in the order they appear on the page.

You will not be able to return to a page once you have clicked the continue button.

If you wish to take part, please complete the consent form below.

CONSENT FORM
Please select your choice below.
1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:
You have read the above information
You voluntarily agree to participate
You are aged 18 years of age or over

If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree

( ) Disagree

Background information
2) Please enter today's date.
_____

3) Please enter your email address below (so we can contact you to take part in the final part of the study and to let you know if you are the winner of the prize draw).

Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.
_____

4) Please write your name below.
_____

5) Are you male or female?
( ) Male
( ) Female

6) Please enter your age.
_____

7) What is your current occupation?
( ) Student
( ) Employed
( ) Unemployed
( ) Other (Please specify):
_____*

8) If you answered student in the previous question, what subject are you studying?
_____

9) Which of the following best describes your ethnicity? (Please tick one of the following).
( ) White
( ) Mixed
( ) Asian or Asian British
( ) Black or Black British
( ) Chinese
( ) Other Ethnic Group
( ) Prefer not to say

Exercise

Now I'd like to ask you some questions about exercise. Please note for the purposes of this study, exercise is defined as:

"any moderate to vigorous physical activity, performed in your leisure time, that raises your heart rate, and results in you becoming warm and at least mildly out of breath."

10) In the past 7 days, on how many days have you exercised for 30 minutes or more?
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7

11) In the average week, on how many days do you exercise for 30 minutes or more?
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7

Considering the past 7 day period, how many times have you done the following kinds of exercise for 30 minutes or more during your leisure time?

12) Strenuous exercise (heart beats rapidly) (e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance cycling)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

13) Moderate exercise (not exhausting) (e.g., fast walking, baseball, tennis, easy cycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

14) Mild exercise (minimal effort) (e.g., yoga, archery, fishing from a river bank, bowling, horseshoes, golf, snowmobiling, easy walking)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

15) Considering the past 7 day period, during your leisure time how often have you engaged in any regular activity long enough to work up a sweat (heart beats rapidly)?
( ) Often
( ) Sometimes
( ) Never / Rarely

In this section I'd like to ask you about your thoughts and feeling about yourself.

Please note, there are no right or wrong answers to any of the questions. We are interested only in finding out what YOU think and feel.

16) When we think of ourselves, our thoughts are sometimes negative and sometimes positive. We are interested in the POSITIVE thoughts you have about yourself.

Please indicate how much you agree or disagree with each of the following statements.

Thinking POSITIVELY about myself is something…

	Disagree completely 1	2	3	4	5	6	Agree completely 7
… I do automatically.							
… that feels sort of natural to me.							
… I do without further thinking.							
… I would find hard not to do.							
… that's typically "me".							

In this section we are interested in how you respond to things that make you feel anxious or threatened.

Sometimes when we face difficulties, challenges or problems in our daily lives we think about ourselves. We are interested in how often you tend to think about yourself when things start to bother you.

17) When I feel threatened or anxious by people or events I find myself...

	Disagree completely 1	2	3	4	5	6	Agree completely 7
… thinking about my strengths.							
… thinking about my values.							
… thinking about my principles.							
… thinking about my family.							
… thinking about what I stand for.							
… thinking about my friends.							
… thinking about the things that I am good at.							
… thinking about the things that I like about myself.							
… thinking about my failings.							
… thinking about the people I love.							

18) I have high self-esteem.
Not very true of me   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Very true of me

I'd like to ask you about your thoughts about exercise and how you typically respond when you come across information about the benefits of exercising.

The following statements represent different ways that people personally deal with information that they run across in the mass media and other places about the benefits of exercising. For each statement, please indicate how strongly you agree or disagree.

19) After I encounter information about the benefits of exercising, I am likely to stop and think about it.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

20) If I need to act on the benefits of exercising, the more viewpoints I get the better.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

21) After thinking about the benefits of exercising, I have a broader understanding.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

22) When I encounter information about the benefits of exercising, I read or listen to most of it, even though I may not agree with its perspective.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

23) It is important for me to interpret information about the benefits of exercising in a way that applies directly to my life.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

24) When I encounter information about the benefits of exercising, I focus on only a few key points.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

25) There is far more information on the benefits of exercising than I personally need.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

26) When I see or hear information about the benefits of exercising, I rarely spend much time thinking about it.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

27) If I need to act on information about the benefits of exercising, the advice of one expert is enough for me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

---

Exercise
28) Please click on this link to read some information about exercise. When you are finished reading the information close the new PDF window and return to the survey window.

Please remember to close only the pdf window and not the entire browser when you are finished reading the information!
[ ] Please tick to confirm you have read the information and closed the PDF file.

---

29) Please describe how much time a day the information suggests that you should exercise for.

_____

30) Please describe one way in which the information suggests you could increase the amount you exercise.

_____

We are interested in your thoughts and feelings about the information you have just read.

31) Overall, how believable did you find the content of the information?
Unbelievable   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Believable

32) Overall, how convincing did you find the content of the information?
Unconvincing   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Convincing

33) The information was relevant to me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

34) I thought deeply about the information.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

WHILE reading the information...

35) ...I thought about how I might fit exercise into my daily routine.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

36) ...I thought about how the information was personally relevant to me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

37) ...I was criticising the information.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

38) ...I was thinking of points that went against the information.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

39) ...I was feeling sceptical of the information.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

To what extent do you agree with the following statements?

40) I am worried about my current level of exercise.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

41) I worry about the consequences of my current level of exercise.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

42) If you continue to exercise at your current level, how likely are you to look as good as you could?
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very likely

43) If you continue to exercise at your current level, how likely are you to feel as good as you could?
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very likely

45) To look as good as you could, do you need to increase your current level of exercise?
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

46) To feel as good as you could, do you need to increase your current level of exercise?
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

47) Please indicate which of the following applied to you WHILE you were reading the information.

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
I felt irritated.							
I felt angry.							
I felt annoyed.							

Next, we'd like to ask for your thoughts and feelings about increasing the amount you exercise by AT LEAST ONE EXTRA SESSION of exercise (30 minutes or more) over the next 7 days.

48) I intend to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

49) I will try to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

50) I plan to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

51) I think of myself as the sort of person who would increase the amount of exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

52) Increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days is an important part of who I am.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

53) I am NOT the type of person who would increase the amount of exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.

Strongly disagree　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7 Strongly agree

54) If I did NOT increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days I would feel regret.
Strongly disagree　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7 Strongly agree

55) I would feel regret if I did NOT increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7 Strongly agree

56) For me to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days would be...
Unimportant　　　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7　　Important

57) For me to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days would be...
Harmful　　　　　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7　　Beneficial

58) For me to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days would be...
Worthless　　　　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7　　Valuable

59) For me to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days would be...
Unenjoyable　　　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7　　Enjoyable

60) For me to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days would be...
Unpleasant　　　　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7　　Pleasant

61) For me to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days would be...
Boring　　　　　　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7　　Exciting

62) If I wanted to I could increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7 Strongly agree

63) I believe I have complete control over increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7 Strongly agree

64) It is mostly up to me whether I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7 Strongly agree

65) For me to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days would be...
Impossible　　　　　　( ) 1　　( ) 2　　( ) 3　　( ) 4　　( ) 5　　( ) 6　　( ) 7　　Possible

66) Most people who are important to me think I should increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

67) The people in my life whose opinions I value would approve of me increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

68) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days it will make me look better.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

69) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days it will make me feel better.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

70) Increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days is an effective way to improve how I look.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

71) Increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days is an effective way to improve how I feel.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

72) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days, I feel that my chances of looking as good as I could are...
Very small   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very big

73) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days, I feel that my chances of feeling as good as I could are...
Very small   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very big

74) If I did NOT increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days it would bother me.
Very unlikely   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very likely

75) If I did NOT increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days I would regret it.
Very unlikely   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very likely

76) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days I would feel proud.
Very unlikely   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very likely

77) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days I would be happy.
Very unlikely   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very likely

78) I have made a detailed plan regarding...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
... when to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.							
... where to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.							
... how to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.							
… how many extra sessions (30 minutes or more) of exercise I will do over the next 7 days.							

Thank You!

Thank you very much for taking the time to complete this questionnaire!

In 7 days' time you will receive an e-mail with a link to the short second and final questionnaire.

Please try to complete the second questionnaire as soon as you receive the email.

If you have any questions about the study please contact me (Kerry Fox) via email (k.j.fox@sussex.ac.uk).

Follow-up Questionnaire

Exercise Study - Part 2

Thank you for agreeing to take part in this study.

This questionnaire is the second and final part of the study.

In this questionnaire, you will be asked to answer a few questions about exercise and should only take around 10 minutes to complete.

Participants who complete both questionnaires will be entered into a prize draw with the chance of winning £50!

You are welcome to take part if you are:

Aged 18 or over

Able to read and write in English

PLEASE NOTE:

Your answers will be confidential.

You are under no obligation to take part in this study.

Participation is purely voluntary and you are free to withdraw at any time.

Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards.

Please read the instructions carefully and answer the questions in the order they appear on the page.

You will not be able to return to a page once you have clicked the continue button.

If you wish to take part, please complete the consent form below.

CONSENT FORM
Please select your choice below.
1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:
You have read the above information
You voluntarily agree to participate
You are 18 years of age or over

If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree
( ) Disagree

_____

Background information

2) Please enter today's date.
_____

3) Please enter your email address below (so we can let you know if you are the winner of the prize draw. Please provide the same e-mail address as in the previous questionnaire).

Names and email addresses will be removed from all files as soon as the final phase of

the study has been completed, and your answers will be stored anonymously from that point onwards.

_____

4) Please write your name below.

_____

Exercise

Now I'd like to ask you some questions about exercise. Please note for the purposes of this study, exercise is defined as:

"any moderate to vigorous physical activity, performed in your leisure time, that raises your heart rate, and results in you becoming warm and at least mildly out of breath."

5) In the past 7 days, on how many days have you exercised for a total of 30 minutes or more?
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7

6) In the average week, on how many days do you exercise for a total of 30 minutes or more?
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7

Considering the past 7 day period, how many times have you done the following kinds of exercise for 30 minutes or more during your leisure time?

7) Strenuous exercise (heart beats rapidly) (e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance cycling)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6

( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

8) Moderate exercise (not exhausting) (e.g., fast walking, baseball, tennis, easy cycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

9) Mild exercise (minimal effort) (e.g., yoga, archery, fishing from river bank, bowling, horseshoes, golf, snowmobiling, easy walking)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8

( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

10) Considering the past 7 day period, during your leisure time how often have you engaged in any regular activity long enough to work up a sweat (heart beats rapidly)?
( ) Often
( ) Sometimes
( ) Never / Rarely

11) I have increased the amount I exercise by at least one extra session of exercise (30 minutes or more) over the past 7 days.
Definitely have not   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Definitely have

12) I have increased the amount I exercise by at least one extra session of exercise (30 minutes or more) over the past 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

13) During the past 7 days I have ...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
... constantly monitored myself to see whether I have increased the amount I exercise by at least one extra session of exercise (30 minutes or more).							
... watched carefully that I have increased the amount I exercise by at least one extra session of exercise (30 minutes or more).							
... often had the intention on my mind to increase the amount I exercise by at							

least one extra session of exercise (30 minutes or more).							
... always been aware that I needed to increase the amount I exercise by at least one extra session of exercise (30 minutes or more).							
... really tried to increase the amount I exercise by at least one extra session of exercise (30 minutes or more).							
... tried my best to act in accordance with my standards.							

Next, we'd like to ask for your thoughts and feelings about increasing the amount you exercise by AT LEAST ONE EXTRA SESSION of exercise (30 minutes or more) over the *NEXT 7 days.*

14) In the NEXT 7 days, on how many days do you intend to exercise for a total of 30 minutes or more?
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7

15) I intend to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

16) I will try to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

17) I plan to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

18) I think of myself as the sort of person who would increase the amount of exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

19) Increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days is an important part of who I am.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

20) I am NOT the type of person who would increase the amount of exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

21) I have made a detailed plan regarding...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
... when to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.							
... where to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.							
... how to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.							
… how many extra sessions (30 minutes or more) of exercise I will do over the next 7 days.							

Considering the NEXT 7 day period, how many times do you expect you will do the following kinds of exercise for 30 minutes or more during your leisure time?

22) Strenuous exercise (heart beats rapidly) (e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance cycling)

( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

23) Moderate exercise (not exhausting) (e.g., fast walking, baseball, tennis, easy cycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

24) Mild exercise (minimal effort) (e.g., yoga, archery, fishing from river bank, bowling, horseshoes, golf, snowmobiling, easy walking)
( ) 0

( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

25) Considering the NEXT 7 day period, during your leisure time how often do you expect you will engage in any regular activity long enough to work up a sweat (heart beats rapidly)?
( ) Often
( ) Sometimes
( ) Never / Rarely

Thank You!

Thank you very much for taking the time to complete this questionnaire.

This study was designed to explore whether the different types of health information about exercise would influence your responses to it. Therefore some of you were asked to read information that used words to tell you about the benefits of exercise, while some of you were asked to read information that used a comic to tell you about the benefits of exercise.

If you would like to withdraw your questionnaire now that you know the purpose of the study and/or you would like more information about this study, please contact me (Kerry Fox) via email (k.j.fox@sussex.ac.uk)

If you would like more information about how to increase the amount you exercise you do you may find the following websites useful:

NHS Choices - Health and Fitness

http://www.nhs.uk/livewell/fitness/Pages/Fitnesshome.aspx

BUPA - Benefits of Exercise:

http://www.bupa.co.uk/individuals/health-information/directory/b/benefits-of-exercise

NHS Choices - Ideas to 'Get Fit for Free':

http:www.nhs.uk/Livewell/fitness/Pages/free-fitnesswww.nhs.uk/Livewell/fitness/Pages/free-fitness

If you would like more information about what services are available to you if you're concerned or need extra help increasing the amount of exercise you do, you may find the following website useful:

NHS Services:

http://www.nhs.uk/Service-Search/

Questionnaires referred to in Chapter 4, Study 2

Time 1 Questionnaire

Exercise Study - Part 1

Thank you for agreeing to take part in this study.

This questionnaire is the first part of a two-part study and I shall be contacting you in one week's time to ask you some further questions. Initially, you will be asked to answer some questions about exercise and your values. You will then be asked to read some health-related information and to give your responses to this. This questionnaire should take about 20 minutes to complete

People who complete both parts will be entered into a prize draw with the chance of winning £50!

You are welcome to take part if you are:

Aged 18 or over

Able to read and write in English

PLEASE NOTE:

This study has been reviewed by the Sciences and Technology Cross-Schools Research Ethics Committee (crecscitec@sussex.ac.uk) at the University of Sussex and has been approved.

Your answers will be confidential.

You are under no obligation to take part in this study. Participation is purely voluntary and you are free to withdraw at any time, without giving a reason, until it is no longer practical for you to do so. Thus, this will only be possible up to the final phase of the study at which data analysis will commence, which shall be approximately one month after you have taken part.

Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards.

Please read the instructions carefully and answer the questions in the order they appear on the page.

You will not be able to return to a page once you have clicked the continue button.   If you wish to take part, please complete the consent form below.

CONSENT FORM

Please select your choice below.

1) ELECTRONIC CONSENT   Clicking the agree button below indicates that: You have read the above information   You voluntarily agree to participate   You are aged 18 years of age or over   If you do not wish to participate in this study, please decline participation by clicking the disagree button and then navigate away from this page.

( ) Agree   ( ) Disagree

Background information

2) Please enter your email address below (so we can contact you to take part in the final part of the study). Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards. Please use the same email address for both parts.
_____

3) Please write your name below.
_____

4) Are you male or female?
( ) Male
( ) Female

5) Please enter your age.
_____

6) What is your current occupation?
( ) Employed
( ) Student
( ) Unemployed
( ) Other: _____

7) What is your nationality?
_____

8) Which of the following best describes your ethnicity? (Please tick one of the following).
( ) White
( ) Mixed
( ) Asian or Asian British
( ) Black or Black British
( ) Chinese
( ) Other Ethnic Group
( ) Prefer not to say

Now I'd like to ask you some questions about exercise. Please note for the purposes of this study, exercise is defined as:

"any moderate to vigorous physical activity, performed in your leisure time, that raises your heart rate, and results in you becoming warm and at least mildly out of breath."

9) In the past 7 days, on how many days have you exercised for 30 minutes or more?
( ) 0
( ) 1
( ) 2
( ) 3

( ) 4
( ) 5
( ) 6
( ) 7

10) In the average week, on how many days do you exercise for 30 minutes or more?
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7

Considering the past 7 day period, how many times have you done the following kinds of exercise for 30 minutes or more during your leisure time?

11) Strenuous exercise (heart beats rapidly) (e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance cycling)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

12) Moderate exercise (not exhausting) (e.g., fast walking, baseball, tennis, easy cycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing)
( ) 0
( ) 1
( ) 2
( ) 3

( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

13) Mild exercise (minimal effort) (e.g., yoga, archery, fishing from a river bank, bowling, horseshoes, golf, snowmobiling, easy walking)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

14) Considering the past 7 day period, during your leisure time how often have you engaged in any regular activity long enough to work up a sweat (heart beats rapidly)?
( ) Often
( ) Sometimes
( ) Never / Rarely

15) Overall my attitude towards my exercising is...
Extremely negative   ( ) 1 ( ) 2   ( ) 3 ( ) 4   ( ) 5 ( ) 6 ( ) 7 Extremely positive

16) Overall my attitude towards my exercising is...
Extremely unfavourable ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Extremely favourable

---

Now we'd like to ask you about your thoughts about exercise and how you typically respond when you come across information about the benefits of exercising.   The following statements represent different ways that people personally deal with information that they come across in the mass media and other places about the benefits of exercising. For each statement, please indicate how strongly you agree or disagree.

17) After I encounter information about the benefits of exercising, I am likely to stop and think about it.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

18) If I need to act on the benefits of exercising, the more viewpoints I get the better.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

19) After thinking about the benefits of exercising, I have a broader understanding.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

20) When I encounter information about the benefits of exercising, I read or listen to most of it, even though I may not agree with its perspective.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

21) It is important for me to interpret information about the benefits of exercising in a way that applies directly to my life.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

22) When I encounter information about the benefits of exercising, I focus on only a few key points.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

23) There is far more information about the benefits of exercising than I personally need.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

24) When I see or hear information about the benefits of exercising, I rarely spend much time thinking about it.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

25) If I need to act on information about the benefits of exercising, the advice of one expert is enough for me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

---

Self-AFFIRMATION CONDITION*:*

Ranking of personal values

In this section we are interested in investigating people's values. By values we mean the moral principles and standards by which people try to live their lives. For example, honesty might be a core value for some people. That is, they may try to be honest in all they do - whether in dealing with other people or when studying or working. Following are some personal values that other people have described as important to them.

Conscientiousness
Spirituality/religiousness
Compassion
Intelligence
Generosity
Trustworthiness
Creativity
Hedonism (the pursuit of pleasure)
Friendliness
Kindness
Spontaneity

26) Please select the value that is MOST important to YOU, and write it in the space provided below.   Please note, this value does NOT have to appear on the list above. The MOST important value to me is...

_____

27) Why is this value important to YOU?
Please write THREE reasons why this value is important to you and ONE example of something you've done to demonstrate how important it is to you.

	.
Reason 1	_____ _____
Reason 2	_____ _____
Reason 3	_____ _____
Example	_____ _____

CONTROL CONDITION:

Ranking of personal values

In this section we are interested in investigating people's values. By values we mean the moral principles and standards by which people try to live their lives. For example, honesty might be a core value for some people. That is, they may try to be honest in all they do - whether in dealing with other people or when studying or working. Following are some personal values that other people have described as important to them.

Conscientiousness
Spirituality/religiousness

Compassion
Intelligence
Generosity
Trustworthiness
Creativity
Hedonism (the pursuit of pleasure)
Friendliness
Kindness
Spontaneity

26) Please select the value that is LEAST important to YOU, and write it in the space provided below.   Please note, this value does NOT have to appear on the list above. The LEAST important value to me is...
_____

27) Why might this value be important to SOMEONE ELSE?   Please write THREE reasons why you think this value might be important to SOMEONE ELSE and ONE example of something someone else might do to demonstrate how important it is to them.

	.
Reason 1	_____ _____
Reason 2	_____ _____
Reason 3	_____ _____
Example	_____ _____

28. How important to you is the value that you selected to write about?
Extremely unimportant ( )1   ( )2   ( )3   ( )4   ( )5   ( )6   ( )7   Extremely important

Please indicate to what extent the following words describe how you currently feel, that is how you feel RIGHT NOW.

29. RIGHT NOW I feel...

	Not at all 1	2	3	4	5	6	Very much 7
...LOVING towards other people.							
...COMPASSIONATE towards other people.							
...CONNECTED to other people.							

30) Please click on the link below entitled 'Information' to read some information about exercise. When you are finished reading the information close the new PDF window and return to the survey window.

[ ] Please tick to confirm you have read the information and closed the PDF file.

---

32) How much time a day does the information say you should exercise for?
_____

33) Please describe one way in which the information suggests you could increase the amount you exercise.
_____

We are interested in your thoughts and feelings about the information you have just read.

34) Overall, how believable did you find the content of the information?
Unbelievable   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Believable

35) Overall, how convincing did you find the content of the information?
Unconvincing   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Convincing

36) The information was relevant to me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

37) I thought deeply about the information.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

38) The information was distorted.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

39) The information was exaggerated.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

WHILE reading the information...
40) ...I thought about how I might fit exercise into my daily routine.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

41) ...I thought about how the information was personally relevant to me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

42) ...I was criticising the information.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

43) ...I was thinking of points that went against the information.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

44) ...I was feeling sceptical of the information.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

45) Please indicate which of the following applied to you WHILE you were reading the information.

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
I felt irritated.							
I felt angry.							
I felt annoyed.							

To what extent do you agree with the following statements?

46) I am worried about my current level of exercise.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

47) I worry about the consequences of my current level of exercise.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

48) If you continue to exercise at your current level, how likely are you to look as good as you could?
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very likely

49) If you continue to exercise at your current level, how likely are you to feel as good as you could?
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very likely

50) To look as good as you could, do you need to increase your current level of exercise?
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very much

51) To feel as good as you could, do you need to increase your current level of exercise?
Not at all ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Very much

Next, we'd like to ask for your thoughts and feelings about increasing the amount you exercise by AT LEAST ONE EXTRA SESSION of exercise (30 minutes or more) over the next 7 days.

52) I intend to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

53) I will try to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

54) I plan to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 Strongly agree

55) I think of myself as the sort of person who would increase the amount of exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

56) Increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days is an important part of who I am.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

57) I am NOT the type of person who would increase the amount of exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

58) If I did NOT increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days I would feel regret.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

59) I would feel regret if I did NOT increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

60) For me to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days would be...

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	
Unimportant								Important
Harmful								Beneficial
Unpleasant								Valuable
Worthless								Pleasant
Unenjoyable								Enjoyable
Boring								Exciting

61) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days I would feel proud.
Very unlikely   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very likely

62) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days I would be happy.
Very unlikely   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very likely

63) If I wanted to I could increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

64) I believe I have complete control over increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

65) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days, I feel that my chances of looking as good as I could are...

Very small   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very big

66) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days, I feel that my chances of feeling as good as I could are...

Very small   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very big

67) I have made a detailed plan regarding...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
... when to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.							
... where to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.							
... how to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.							
… how many extra sessions (30 minutes or more) of exercise I will do over the next 7 days.							

68) For me to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days would be...

Very difficult   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very easy

69) It would be easy for me to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.

Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

70) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days it will make me feel better.

Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

71) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days it will make me look better.

Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

72) Increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days is an effective way to improve how I feel.

Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

73) Increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days is an effective way to improve how I look.

Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

I am confident that I can increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days...
74) ...even when things are not going well for me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

75) ...even if I find myself in situations in which this might be difficult.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7 Strongly agree

---

Please now think back to the task you were asked to complete near the start of this questionnaire, when we asked you to choose and write about personal values. We would like to ask you about your experiences of completing that task.

76) Doing the task about values made me aware of...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
...Who I am.							
...People's expectations of me.							
...My values (the principles and standards by which I try to live my life).							

Thank You!

Thank you very much for taking the time to complete this questionnaire!

In 7 days time you will receive an e-mail with a link to the second and final questionnaire. This questionnaire will take about 5-10 minutes to complete.   Please try to complete the second questionnaire as soon as you receive the email.

If you have any questions about the study please contact us (Kerry Fox via email (k.j.fox@sussex.ac.uk).

Follow-up Questionnaire

Exercise Study - Part 2

Thank you for agreeing to take part in this study.

This questionnaire is the second and final part of the study.   In this questionnaire, you will be asked to answer a few questions about exercise and some questions concerning

your thoughts and beliefs about yourself and others. This part should only take around 10 minutes to complete.

People who complete all three parts will be entered into a prize draw with the chance of winning £50!

You are welcome to take part if you are:

Aged 18 or over

Able to read and write in English

PLEASE NOTE:

This study has been reviewed by the Sciences and Technology Cross-Schools Research Ethics Committee (crecscitec@sussex.ac.uk) at the University of Sussex and has been approved.

Your answers will be confidential.

You are under no obligation to take part in this study. Participation is purely voluntary and you are free to withdraw at any time, without giving a reason, until it is no longer practical for you to do so. Thus, this will only be possible up to the final phase of the study at which data analysis will commence, which shall be approximately one month after you have taken part.

Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards.

Please read the instructions carefully and answer the questions in the order they appear on the page.

You will not be able to return to a page once you have clicked the continue button.   If you wish to take part, please complete the consent form below.

CONSENT FORM

Please select your choice below.
1) ELECTRONIC CONSENT
Clicking the agree button below indicates that:
You have read the above information
You voluntarily agree to participate
You are 18 years of age or over
If you do not wish to participate in this study, please decline participation by clicking the disagree button and then navigate away from this page.
( ) Agree
( ) Disagree

_____

Background information

2) Please enter your email address below (so we can let you know if you are the winner of the prize draw. Please provide the same e-mail address as in the previous questionnaire).

Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.

_____

3) Please write your name below.

_____

Now I'd like to ask you some questions about exercise. Please note for the purposes of this study, exercise is defined as: "any moderate to vigorous physical activity, performed in your leisure time, that raises your heart rate, and results in you becoming warm and at least mildly out of breath."

4) In the past 7 days, on how many days have you exercised for a total of 30 minutes or more?
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7

5) In the average week, on how many days do you exercise for a total of 30 minutes or more?
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7

Considering the past 7 day period, how many times have you done the following kinds of exercise for 30 minutes or more during your leisure time?

6) Strenuous exercise (heart beats rapidly) (e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance cycling)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7

( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

7) Moderate exercise (not exhausting) (e.g., fast walking, baseball, tennis, easy cycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

8) Mild exercise (minimal effort) (e.g., yoga, archery, fishing from river bank, bowling, horseshoes, golf, snowmobiling, easy walking)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9

( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

9) Considering the past 7 day period, during your leisure time how often have you engaged in any regular activity long enough to work up a sweat (heart beats rapidly)?
( ) Often
( ) Sometimes
( ) Never / Rarely

I have increased the amount I exercise by at least one extra session of exercise (30 minutes or more) over the past 7 days.

10) I have increased the amount I exercise by at least one extra session of exercise (30 minutes or more) over the past 7 days.
Definitely have not   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5 ( ) 6 ( ) 7   Definitely have

11) I have increased the amount I exercise by at least one extra session of exercise (30 minutes or more) over the past 7 days.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

12) During the past 7 days I have ...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
... constantly monitored myself to see whether I have increased the amount I exercise by at least one extra session of exercise (30 minutes or more).							
... watched carefully that I have increased the amount I exercise by at least one extra session of exercise (30 minutes or more).							
... often had the intention on my mind to increase the amount I exercise by at least one extra session of exercise (30 minutes or more).							
... always been aware that I needed to increase the amount I exercise							

by at least one extra session of exercise (30 minutes or more).						
... really tried to increase the amount I exercise by at least one extra session of exercise (30 minutes or more).						
... tried my best to act in accordance with my standards.						

Next, we'd like to ask for your thoughts and feelings about increasing the amount you exercise by AT LEAST ONE EXTRA SESSION of exercise (30 minutes or more) over the NEXT 7 days.

13) I intend to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

14) I will try to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

15) I plan to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

16) I think of myself as the sort of person who would increase the amount of exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

17) Increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days is an important part of who I am.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

18) I am NOT the type of person who would increase the amount of exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

19) I have made a detailed plan regarding...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
... when to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.							
... where to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.							

... how to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.							
… how many extra sessions (30 minutes or more) of exercise I will do over the next 7 days.							

20) For me to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days would be...
Very difficult ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very easy

21) It would be easy for me to increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

22) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days it will make me feel better.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

23) If I increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days it will make me look better.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

24) Increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days is an effective way to improve how I feel.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

25) Increasing the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days is an effective way to improve how I look.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

I am confident that I can increase the amount I exercise by at least one extra session of exercise (30 minutes or more) over the next 7 days...
26) ...even when things are not going well for me.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

27) ...even if I find myself in situations in which this might be difficult.
Strongly agree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly disagree

---

Next, we'd like to ask you more about increasing the amount you exercise by AT LEAST ONE EXTRA SESSION of exercise (30 minutes or more) over the NEXT 7 days.

28) In the NEXT 7 days, on how many days do you intend to exercise for a total of 30 minutes or more?
( ) 0
( ) 1
( ) 2

( ) 3
( ) 4
( ) 5
( ) 6
( ) 7

Considering the NEXT 7 day period, how many times do you expect you will do the following kinds of exercise for 30 minutes or more during your leisure time?

29) Strenuous exercise (heart beats rapidly) (e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance cycling)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

30) Moderate exercise (not exhausting) (e.g., fast walking, baseball, tennis, easy cycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12

( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

31) Mild exercise (minimal effort) (e.g., yoga, archery, fishing from river bank, bowling, horseshoes, golf, snowmobiling, easy walking)
( ) 0
( ) 1
( ) 2
( ) 3
( ) 4
( ) 5
( ) 6
( ) 7
( ) 8
( ) 9
( ) 10
( ) 11
( ) 12
( ) 13
( ) 14
( ) 15
( ) 16
( ) 17
( ) 18
( ) 19
( ) 20

32) Considering the NEXT 7 day period, during your leisure time how often do you expect you will engage in any regular activity long enough to work up a sweat (heart beats rapidly)?
( ) Often
( ) Sometimes
( ) Never / Rarely

In this section we'd like to ask you about your thoughts and feeling about yourself. Please note, there are no right or wrong answers to any of the questions. We are interested only in finding out what YOU think and feel.

33) When we think of ourselves, our thoughts are sometimes negative and sometimes positive. We are interested in the POSITIVE thoughts you have about yourself. Please indicate how much you agree or disagree with each of the following statements.

Thinking POSITIVELY about myself is something…

	Disagree completely 1	2	3	4	5	6	Agree completely 7
… I do automatically.							
… that feels sort of natural to me.							
… I do without further thinking.							
… I would find hard not to do.							
… that's typically "me".							

Sometimes when we face difficulties, challenges or problems in our daily lives we can find ourselves thinking about ourselves. We are interested in how often you find yourself thinking about yourself when things start to bother you.

34) When I feel threatened or anxious by people or events I find myself...

	Disagree completely 1	2	3	4	5	6	Agree completely 7
… thinking about my strengths.							
… thinking about my values.							
… thinking about my principles.							
… thinking about my family.							
… thinking about what I stand for.							
… thinking about my friends.							
… thinking about the things that I am good at.							
… thinking about the things that I like about myself.							
… thinking about my failings.							
… thinking about the people I love.							

35) I have high self-esteem.
Not very true of me ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 Very true of me

Thank you, that brings us to the end of this study, which comprised of three questionnaires. We would now like to ask you some questions about this study.

36) What do you think the purpose of this study was?
_____

37) Did you think the tasks were related in any way?
( ) No
( ) Yes

38) If yes, can you tell us something about how?
_____

39) Do you feel that your responses on any of the later tasks were influenced by your response to an earlier task?
( ) No
( ) Yes

40) If yes, can you tell us something about how?
_____

41) Have you completed any of the tasks on the three questionnaires before?
( ) No
( ) Yes

42) If yes, can you tell us something about how?
_____

43) Do you think this affected your responses in any way?
_____

Thank You!

Thank you very much for taking the time to complete this questionnaire.

This study was designed to explore different types of health information about exercise. Therefore you were asked to read information that used a comic to tell you about the benefits of exercise.

We were also interested in exploring whether writing about a personally important value would influence responses to the information. Therefore some of you were asked to write about an important value before reading the information and some of you were asked to write about an unimportant value. You all then answered the same questions about exercise.

In addition, we were interested in exploring how your personal traits might influence your responses to the information about exercise. Therefore, the last questionnaire asked you a number of questions designed to assess your personal traits.

If you would like to withdraw your questionnaire now that you know the purpose of the study and/or you would like more information about this study, please contact us (Kerry) via email (k.j.fox@sussex.ac.uk)

If you would like more information about how to increase the amount you exercise you do you may find the following websites useful:

NHS Choices - Health and Fitness

http://www.nhs.uk/livewell/fitness/Pages/Fitnesshome.aspx

BUPA - Benefits of Exercise:

http://www.bupa.co.uk/individuals/health-information/directory/b/benefits-of-exercise

NHS Choices - Ideas to 'Get Fit for Free': http:www.nhs.uk/Livewell/fitness/Pages/free-fitnesswww.nhs.uk/Livewell/fitness/Pages/free-fitness

If you would like more information about what services are available to you if you're concerned or need extra help increasing the amount of exercise you do, you may find the following website useful:

NHS Services:

http://www.nhs.uk/Service-Search/

Correlations between Dependent Variables for the Studies Reported in Chapter 4

Appendix C Table 1

Correlations between Dependent Variables in Study 1 Reported in Chapter 4.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Message acceptance	1.00	.57**	.59**	.11	-.45**	-.35**	-.08	.27**	.33**	.31**	.36**	.05	.23**	.33**
2. Personal relevance	.57**	1.00	.66**	.29**	-.21**	-.22**	-.15	.22**	.36**	.32**	.36**	.18*	.28**	.36**
3. Depth of thought	.50**	.66**	1.00	.34**	-.23**	-.24**	-.02	.13	.46**	.43	.35**	.24**	.44**	.32**
4. Negative affect	.11	.29**	.23**	1.00	.01	.03	-.58**	.55**	.30**	.09	.16*	.36**	.13	.37**
5. Counter-arguing	-.45**	-.21**	-.23**	.01	1.00	.47**	.16	-.23**	-.21**	-.18*	-.23**	.05	-.13	.16*
6. State reactance	-.35**	-.22	-.24**	.34	.47**	1.00	.12	-.18*	.22**	-.21*	-.32**	.01	-.13	-.14
7. Risk	-.08	-.15	-.02	-.58**	.16	.12	1.00	-.61**	-.12	.07	-.03	-.18*	.10	-.34**
8. Imagination	.27**	.22**	.13	.55**	-.23**	-18*	-.61**	1.00	.30**	.21**	.30**	.28**	.20*	.61**
9. Intention	.33**	.36**	.46**	.30**	-.21*	-.22**	-.12	.30**	1.00	.78**	.59**	.60**	.66**	.46**
10. Identity	.31**	.32**	.43**	.09	-.18*	-.21*	.07	.21**	.78**	1.00	.67**	.45**	.67**	.45**
11. Attitude	.36**	.36**	.35**	.16**	-.23**	-.32**	-.03	.30**	.59**	.69**	1.00	.47**	.55**	.58**
12. Anticipated regret	.05	.18*	.24**	.36**	.05	.01	-.18*	.28**	.60**	.45**	.47**	1.00	.47**	.49**
13. Action plans	.23**	.28**	.44**	.13	-.13	-.13	.10	.20*	.66**	.67**	.55**	.47**	1.00	.40**
14. Response Efficacy	.33**	.36**	.32**	.37**	-.16*	-.15	-.34**	.61**	.46**	.45**	.48**	.49**	.40**	1.00

*p < .05, **p < .01

Appendix C Table 2.
Correlation Between Dependent Variables in Study 2 reported in Chapter 4.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Message acceptance	1.00	.63**	.48**	.40**	-.29*	-.16	-.19	.35**	-.38**	.19	.01	.04	.26*	.06	-.02	.08
2. Personal relevance	.63**	1.00	.77**	.27*	-.04	-.13	-.02	.30*	-.30*	.28*	.03	.19	.28*	.21	-.17	.18
3. Depth of thought	.48**	.77**	1.00	.32**	.04	.01	-.06	.33**	-.18	.32**	.18	.19	.45**	.29*	-.29*	.06
4. Negative affect	.40**	.27*	.32**	1.00	-.06	.12	-.57**	.51**	-.07	.29*	-.02	.10	.38**	-.11	-.09	-.20
5. Counter-arguing	-.29*	-.04	.04	-.06	1.00	.57**	.04	.05	.55**	.04	.02	.29*	.10	.16	.06	.15
6. State reactance	-.16	-.13	.01	.12	.57**	1.00	-.06	.04	.42**	.17	-.01	.12	.15	.08	-.01	.00
7. Risk	-.19	-.02	-.06	-.59**	.04	-.06	1.00	-.41**	.07	.02	.21	.05	-.08	.17	-.02	.26*
8. Imagination	.35**	.30*	.33**	.51**	.05	.04	-.41**	1.00	.04	.34**	.16	.38**	.40**	.08	-.22	.01
9. Message derogation	-.38**	-.29*	-.18	-.07	.55**	.42**	.07	.04	1.00	.06	.10	.17	.01	.13	.16	-.04
10. Intention	.19	.28*	.32**	.29*	.04	.17	.02	.34**	.60	1.00	.68**	.54**	.79**	.40**	-.16	.13
11. Identity	.01	.03	.18	-.02	.02	-.01	.21	.16	.10	.68**	1.00	.50**	.55**	.28*	.08	.32*
12. Attitude	.04	.19	.19	.10	.29*	.12	.05	.38**	.17	.54**	.50**	1.00	.49**	.28*	.01	.23*
13. Anticipated regret	.26*	.28*	.45**	.38**	.10	.15	-.08	.40**	.01	.79**	.55**	.49**	1.00	.49**	.28*	.01
14. Action plans	.06	.21	.29*	-.11	.16	.08	.17	.08	.13	.40**	.28*	.28*	.29*	1.00	-.04	.31**
15. Response Efficacy	-.02	-.17	.29*	-.09	.06	-.01	.02	-.22	.16	-.16	.08	.01	-.24	-.04	1.00	.10
16. Coping efficacy	.08	.18	.06	-.20	.15	.00	.26*	.01	-.04	.13	-.32*	.24*	.02	.31*	.10	1.00

$*p < .05, **p < .01$

APPENDIX D: Materials Relating to Chapter 5

Questionnaires Referred to in Chapter 5

Baseline Questionnaire

Alcohol Study - Part 1

Thank you for agreeing to take part in this study.

This questionnaire is the first part of a three-part study and I shall be contacting you in one week to ask you some further questions and again at the beginning of February.

In this first questionnaire you will be asked some questions concerning your thoughts and beliefs about yourself and others. This questionnaire should take around 10 minutes to complete.

People who complete all three parts will be entered into a prize draw with the chance of winning £100!

You are welcome to take part if you are:

Aged 18 or over

Able to read and write in English

PLEASE NOTE:

This study has been reviewed by the University of Sussex Sciences and Technology Cross-Schools Research Ethics Committee (CREC) (crecscitec@sussex.ac.uk) and has been approved.

Your answers will be confidential.

You are under no obligation to take part in this study. Participation is purely voluntary and you are free to withdraw at any time, without giving a reason, until it is no longer practical for you to do so. Thus, this will only be possible up to the final phase of the study at which data analysis will commence, which shall be approximately one month after you have taken part.

Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onwards.

Please read the instructions carefully and answer the questions in the order they appear on the page.

You will not be able to return to a page once you have clicked the continue button.

If you wish to take part, please complete the consent form below.

CONSENT FORM

Please select your choice below.

1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:

You have read the above information
You voluntarily agree to participate
You are 18 years of age or over

If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree
( ) Disagree

Background information
2) Please enter today's date. (NOTE: date will appear in MM/DD/YYYY format)
_____

3) Please enter your email address below (so we can contact you to take part in the second and final part of the study and to let you know if you are the winner of the prize draw).

Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.
_____

4) Please write your name below.
_____

5) Are you male or female?
( ) Male
( ) Female

6) Please enter your age.
_____

7) What is your current occupation?
( ) Employed
( ) Student
( ) Unemployed
( ) Other: _____

8) Which of the following best describes your ethnicity? (Please tick one of the following).
( ) White
( ) Mixed
( ) Asian or Asian British
( ) Black or Black British
( ) Chinese
( ) Other Ethnic Group
( ) Prefer not to say
9) What is your nationality?

_____

10) Do you ever drink alcohol?
( ) No
( ) Yes

_____

In this section we'd like to ask you about your thoughts and feeling about yourself.

Please note, there are no right or wrong answers to any of the questions. We are interested only in finding out what YOU think and feel.

11) When we think of ourselves, our thoughts are sometimes negative and sometimes positive. We are interested in the POSITIVE thoughts you have about yourself.

Please indicate how much you agree or disagree with each of the following statements.

Thinking POSITIVELY about myself is something…

	Disagree completely 1	2	3	4	5	6	Agree completely 7
… I do automatically.							
… that feels sort of natural to me.							
… I do without further thinking.							
… I would find hard not to do.							
… that's typically "me".							

_____

Sometimes when we face difficulties, challenges or problems in our daily lives we can find ourselves thinking about ourselves. We are interested in how often you find yourself thinking about yourself when things start to bother you..

12) When I feel threatened or anxious by people or events I find myself...

	Disagree completely 1	2	3	4	5	6	Agree completely 7
… thinking about my strengths.							
… thinking about my values.							
… thinking about my principles.							
… thinking about my family.							
… thinking about what I stand for.							
… thinking about my friends.							
… thinking about the things that I am good at.							
… thinking about the things that I like about myself.							
… thinking about my failings.							
… thinking about the people I love.							

13) I have high self-esteem.
Not very true of me   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Very true of me

Now we'd like to ask you about your thoughts about alcohol and how you typically respond when you come across information about the health risks of alcohol consumption.

The following statements represent different ways that people personally deal with

information that they come across in the mass media and other places about the health risks of alcohol consumption. For each statement, please indicate how strongly you agree or disagree.

14) After I encounter information about the health risks of alcohol consumption, I am likely to stop and think about it.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

15) If I need to act on the health risks of alcohol consumption, the more viewpoints I get the better.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

16) After thinking about the health risks of alcohol consumption, I have a broader understanding.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

17) When I encounter information about the health risks of alcohol consumption, I read or listen to most of it, even though I may not agree with its perspective.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

18) It is important for me to interpret information about the health risks of alcohol consumption in a way that applies directly to my life.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

19) When I encounter information about the health risks of alcohol consumption, I focus on only a few key points.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

20) There is far more information about the health risks of alcohol consumption than I personally need.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

21) When I see or hear information about the health risks of alcohol consumption, I rarely spend much time thinking about it.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

22) If I need to act on information about the health risks of alcohol consumption, the advice of one expert is enough for me.
Strongly disagree   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   Strongly agree

---

23) Please use the scale below to indicate how easy it would be for you to refuse alcohol in each situation.

If you are unsure or have no opinion, please tick the middle option.

	very difficult to refuse 1	2	3	neither / unsure 4	5	6	very easy to refuse 7
When my spouse / partner is drinking.							
When I am worried.							
When my friends are drinking.							
When I feel upset.							
When I am at a pub or club.							
When I am nervous.							
When I am watching TV.							
When I am listening to music or reading.							
When I first arrive home.							

24) Overall my attitude towards drinking alcohol is...
Extremely negative ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Extremely positive

25) Overall my attitude towards drinking alcohol is...
Extremely unfavourable ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5 ( ) 6 ( ) 7 Extremely favourable

Thank You!
Thank you very much for taking the time to complete this questionnaire.

In 7 days time you will receive an e-mail with a web link to the second questionnaire.

Please try to complete the second questionnaire as soon as you receive the email.
If you have any questions about the study please contact me (Kerry Fox) via
email (K.J.Fox@sussex.ac.uk).

Time 1 Questionnaire

Alcohol Study - Part 2

Thank you for agreeing to take part in this study.

This is the second part of our three-part study. Initially, you will be asked to answer some questions about your alcohol consumption and your values. You will then be asked to read some health-related information and to give your responses to this. This questionnaire should take about 15-20 minutes to complete.

The third and final questionnaire will be sent to you via email at the start of February.

Participants who complete all three questionnaires will be entered in to a prize draw with the chance of winning £100!

You are welcome to take part if you are:

Aged 18 or over

Able to read and write in English

PLEASE NOTE:

This study has been reviewed by the University of Sciences and Technology Cross-Schools Research Ethics Committee (CREC) (crecscitec@sussex.ac.uk) and has been approved.

Your answers will be confidential.

You are under no obligation to take part in this study. Participation is purely voluntary and you are free to withdraw at any time, without giving a reason, until it is no longer practical for you to do so. Thus, this will only be possible up to the final phase of the study at which data analysis will commence, which shall be approximately one month after you have taken part.

Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onward.

Please read the instructions carefully and answer the questions in the order they appear on the page.

You will not be able to return to a page once you have clicked the continue button.

If you wish to take part, please complete the consent form below.

Consent form

Please select your choice below

1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:
You have read the above information
You voluntarily agree to participate
You are 18 years of age or over
If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree
( ) Disagree

Background information

2) Please enter today's date. (NOTE: date will appear in MM/DD/YYYY format)
_____

3) Please enter your email address below (so we can contact you to take part in the final part of the study and notify you if you are the winner of the prize draw. Please provide the same e-mail address as in the previous questionnaire).

Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.
_____

4) Please write your name below.
_____

First, we'd like to ask you some questions about your alcohol consumption.

5) How old were you when you started drinking alcohol, not including small sips or tastes?
_____

6) Since you started drinking, what is the longest period that you have ever had of NOT drinking alcohol?
Days: _____
Months: _____
Years: _____

7) How often do you have a drink containing alcohol?
( ) less than one day per week
( ) 1 day per week
( ) 2 days per week
( ) 3 days per week
( ) 4 days per week
( ) 5 days per week
( ) 6 days per week

( ) everyday

8) How many drinks containing alcohol do you have on a typical day when you are drinking?
_____

9) In the last month, how many times did you get drunk?
_____

10) How often...

	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
...do you have 6 or more drinks on one occasion?					
...during the last year have you found that you were not able to stop drinking once you have started?					
...during the last year have you failed to do what was normally expected of you because of drinking?					
...during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?					
...during the last year have you had a feeling of guilt or remorse after drinking?					
...during the last year have you been unable to remember					

what happened the night before because you had been drinking?					

11) Please give an answer to each of the questions below.

	No	Yes, but not in the last year	Yes, during the last year
Have you or someone else been injured as a result of your drinking?			
Has a relative, a friend, a doctor or another health worker been concerned about your drinking or suggested you cut down?			

SELF-AFFIRMATION CONDITION:

Ranking of personal values

In this section we are interested in investigating people's values. By values we mean the moral principles and standards by which people try to live their lives. For example, honesty might be a core value for some people. That is, they may try to be honest in all they do - whether in dealing with other people or when studying or working. Following are some personal values that other people have described as important to them.

Conscientiousness
Spirituality/religiousness
Compassion
Intelligence
Generosity
Trustworthiness
Creativity
Hedonism (the pursuit of pleasure)
Friendliness
Kindness
Spontaneity

12) Please select the value that is MOST important to YOU, and write it in the space provided below.

Please note, this value does NOT have to appear on the list above. The MOST important value to me is...

_____

13) Why is this value important to YOU?

Please write THREE reasons why this value is important to you and ONE example of something you've done to demonstrate how important it is to you.

	.
Reason 1	_____
Reason 2	_____
Reason 3	_____
Example	_____

CONTROL CONDITION:

Ranking of values

In this section we are interested in investigating people's values. By values we mean the moral principles and standards by which people try to live their lives. For example, honesty might be a core value for some people. That is, they may try to be honest in all they do - whether in dealing with other people or when studying or working. Following are some personal values that other people have described as important to them.

Conscientiousness
Spirituality/religiousness
Compassion
Intelligence
Generosity
Trustworthiness
Creativity
Hedonism (the pursuit of pleasure)
Friendliness
Kindness
Spontaneity

14) Please select the value that is LEAST important to YOU, and write it in the space provided below.

Please note, this value does NOT have to appear on the list above. The LEAST important value to me is...
_____

15) Why might this value be important to SOMEONE ELSE?

Please write THREE reasons why you think this value might be important to SOMEONE ELSE and ONE example of something someone else might do to demonstrate how important it is to them.

	.
Reason 1	_____
Reason 2	_____
Reason 3	_____
Example	_____

16) How important to you is the value that you selected to write about?
Extremely unimportant   ( )1   ( ) 2   ( )3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Extremely important

Please indicate to what extent the following words describe how you currently feel, that is how you feel RIGHT NOW.

17) RIGHT NOW I feel...

	Not at all 1	2	3	4	5	6	Very much 7
...LOVING towards other people.							
...COMPASSIONATE towards other people.							
...CONNECTED to other people.							

Please click on this link to read some health information. When you are finished reading the information, close the new PDF window and return to the survey window.
18) When you are finished reading the information, please go onto the next page.
[ ] Please tick to confirm you have read the information.

19) What was the information you just read about?
_____

To what extent do you agree with the following statements?

20) Stopping drinking alcohol for the month of January would be an effective way for me to...

	Strongly agree 1	2	3	4	5	6	Strongly disagree 7
...lose weight							
...feel better							
...save money							
...make a difference							

Please now think back to the information you read earlier about Dry January. Now, please answer the following questions.

21) I thought deeply about the information.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

22) I reflected on the content of the information.
Not at all   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very much

23) The information was exaggerated.
Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

24) The information was distorted.
Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

To what extent do you agree with the following statements?
25) I am worried about my current level of alcohol consumption.
Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

26) I worry about the consequences of my current level of alcohol consumption.
Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

Thank you. Next, we would like to ask you some questions concerning your thoughts and feelings about stopping drinking alcohol for the month of January.

27) I intend to stop drinking alcohol for the month of January.
Definitely do not intend to   ( ) 1   ( ) 2   ( ) 3 ( ) 4 ( ) 5   ( ) 6 ( ) 7   Definitely intend to

28) I plan to stop drinking alcohol for the month of January

Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

29) I will try to stop drinking alcohol for the month of January
Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

30) I am the type of person who would stop drinking alcohol for the month of January.
Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

31) I think of myself as the sort of person who would want to stop drinking alcohol for the month of January.
Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

32) Stopping drinking alcohol for the month of January is an important part of who I am.
Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

33) I would feel regret if I did NOT stop drinking alcohol for the month of January.
Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

34) If I did NOT stop drinking alcohol for the month of January, I would regret it.
I definitely will not ( ) 1 ( ) 2 ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   I definitely will

35) Do you expect that you will stop drinking alcohol for the month of January?
I definitely will not ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   I definitely will

36) How likely is it that you will stop drinking alcohol for the month of January?
Not at all likely ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very likely

37) For me to stop drinking alcohol for the month of January would be...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	
Unimportant								Important
Harmful								Beneficial
Worthless								Valuable
Unpleasant								Pleasant
Unenjoyable								Enjoyable
Boring								Exciting

38) If I stop drinking alcohol for the month of January, I would feel happy.
Very unlikely ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very likely

39) If I stop drinking alcohol for the month of January, I would feel proud.
Very unlikely ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very likely

40) It would be possible for me to stop drinking alcohol for the month of January.
Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

41) I believe I have complete control over stopping drinking alcohol for the month of January.

Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

---

Please now answer the following questions.

42) For me to stop drinking alcohol for the month of January would be...

Very difficult ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very easy

43) It would be easy for me to stop drinking alcohol for the month of January.

Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

44) If someone were to offer me alcohol during the month of January, I know that I could refuse it.

Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

45) I know for sure that I could refuse alcohol if someone were to offer it to me during the month of January.

Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

I am confident that I can stop drinking alcohol for the month of January...

46) ...even when things are not going well for me.

Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

47) ...even if I find myself in situations in which this might be difficult.

Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

48) I am confident that I could get back to not drinking alcohol during the month of January...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
...even if I had been drinking for a day or two.							
...even if I had been drinking for a few days.							
...even if I had a full-blown relapse.							

---

49) Which of the following best describes your plans for January?

( ) To stop drinking

( ) To drink less than I currently do

( ) To drink as much as I currently do

( ) To drink more than I currently do

50) Which of the following best describes your plans for January?
( ) To stop drinking
( ) To drink on fewer days than I currently do
( ) To drink on as many days I currently do
( ) To drink on more days than I currently do

51) Please select one answer for each of the following statements:-

	Yes	No
Had you heard about Dry January before today?		
Had you ever taken part in Dry January before?		

Please now think back to the task you were asked to complete near the start of this questionnaire, when we asked you to choose and write about personal values. We would like to ask you about your experiences of completing that task.

52) Doing the task about values made me aware of...

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7
...Who I am.							
...People's expectations of me.							
...My values (the principles and standards by which I try to live my life).							

Thank you very much for taking the time to complete this part of the study.

53) Would you like to be given more information about ways to stop drinking in January?
Strongly disagree ( ) 1 ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

Thank You!

Final Page

Thank you very much for taking the time to complete this part of the study.

In the beginning of February, you will receive an e-mail with a web link to the final questionnaire. Please try to complete the questionnaire as soon as you receive that email.

If you have any questions about the study so far, please contact me (Kerry Fox) or via email (K.J.Fox@sussex.ac.uk).

If you would like more information about how to decrease the amount you alcohol you drink or you would like more information about Dry January, you may find the following websites useful:

Dry January Website: http://www.dryjanuary.org.uk

Drinkaware (Advice on how to reduce your alcohol consumption): www.drinkaware.co.uk/make-a-change/how-to-cut-down

NHS Choices (alcohol): www.nhs.uk/livewell/alcohol/Pages/Alcoholhome.aspx

If you would like more information about what services are available to you if you are worried about your levels of alcohol consumption, you may find the following websites useful:

NHS Services: www.nhs.uk/Service-Search/

Follow-up Questionnaire

Alcohol Study - Part 3

Thank you for agreeing to take part in this study.

This questionnaire is the third and final part of our study. In it you will be asked to answer a few further questions about your alcohol consumption. This questionnaire should take no more than 10 minutes to complete.

Participants who complete all three questionnaires will be entered in to a prize draw with the chance of winning £100!

You are welcome to take part if you are:

Aged 18 or over

Able to read and write in English

PLEASE NOTE:

This study has been reviewed by the University of Sussex Sciences and Technology Cross-Schools Research Ethics Committee (CREC) (crecscitec@sussex.ac.uk) and has been approved.

Your answers will be confidential.

You are under no obligation to take part in this study. Participation is purely voluntary and you are free to withdraw at any time, without giving a reason, until it is no longer practical for you to do so. Thus, this will only be possible up to the final phase of the study at which data analysis will commence, which shall be approximately one month after you have taken part.

Names and e-mail addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point onward.

Please read the instructions carefully and answer the questions in the order they appear on the page.

You will not be able to return to a page once you have clicked the continue button.

If you wish to take part, please complete the consent form below.

Consent form

Please select your choice below

1) ELECTRONIC CONSENT
Clicking the *agree* button below indicates that:
You have read the above information
You voluntarily agree to participate
You are 18 years of age or over
If you do not wish to participate in this study, please decline participation by clicking the *disagree* button and then navigate away from this page.
( ) Agree
( ) Disagree

Background information

2) Please enter today's date. (NOTE: date will appear in MM/DD/YYYY format)
_____

3) Please enter your email address below (so we can contact you if you are the winner of the prize draw).

Names and email addresses will be removed from all files as soon as the final phase of the study has been completed, and your answers will be stored anonymously from that point.
_____

4) Please write your name below.
_____

First, we'd like to ask you some questions about your alcohol consumption in January 2015.

5) Which of the following best describes your alcohol consumption for the month of January:
( ) I stopped drinking
( ) I drank on fewer days than I did before January.
( ) I drank on as many days as I did before January.
( ) I drank on more days than I did before January.

6) Which of the following best describes your alcohol consumption for the month of January:
( ) I stopped drinking
( ) I drank less than I did before January.
( ) I drank as much as I did before January.
( ) I drank more than I did before January.

7) On how many days in January did you have an alcoholic drink?
_____

8) Did you sign up and take part in Dry January?
( ) Yes
( ) No

9) Did you raise money for Alcohol Concern?
( ) Yes
( ) No

Thinking about your alcohol consumption, please now answer the following questions about your plans for February 2015.

10) Which of the following best describes your plans for February 2015:
( ) To not drink alcohol
( ) To drink less than I used to (before January 2015).
( ) To drink as much as I used to (before January 2015).
( ) To drink more than I used to (before January 2015).

11) Which of the following best describes your plans February 2015:
( ) To not drink alcohol
( ) To drink on fewer days than I used to (before January 2015).
( ) To drink on as many days as I used to (before January 2015).
( ) To drink on more days than I used to (before January 2015).

Please now answer the following questions.

12) For me to stop drinking alcohol for the month of February would be...
Very difficult   ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Very easy

13) It would be easy for me to stop drinking alcohol for the month of February.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

14) If someone were to offer me alcohol during the month of February, I know that I could refuse it.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

15) I know for sure that I could refuse alcohol if someone were to offer it to me during the month of February.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

I am confident that I can stop drinking alcohol for the month of February...

16) ...even when things are not going well for me.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

17) ...even if I find myself in situations in which this might be difficult.
Strongly disagree ( ) 1   ( ) 2   ( ) 3   ( ) 4   ( ) 5   ( ) 6   ( ) 7   Strongly agree

18) Please use the scale below to indicate how easy it would be for you to refuse alcohol in each situation.

	very difficult to refuse 1	2	3	neither / unsure 4	5	6	very easy to refuse 7
When my spouse / partner is drinking.							
When I am worried.							
When my friends are drinking.							
When I feel upset.							
When I am at a pub or club.							
When I am nervous.							
When I am watching TV.							
When I am listening to music or reading.							
When I first arrive home.							

Thank you, that brings us to the end of this study which comprised of three questionnaires. We would now like to ask you some questions about this study.

19) What do you think the purpose of this study was?
_____

20) Did you think the tasks were related in any way?
( ) Yes
( ) No

21) If yes, can you tell us something about how?
_____

22) Do you feel that your responses on any of the later tasks were influenced by your response to an earlier task?
( ) Yes
( ) No

23) If yes, can you tell us something about how?
_____

24) Have you completed any of the tasks on the three questionnaires before?
( ) Yes
( ) No

25) If yes, can you briefly describe which one and when.
_____

26) Do you think this affected your responses in any way?
_____

Thank You!

Thank you very much for taking the time to complete this part of the study.

This study was designed to explore whether information about Dry January would influence your responses to stopping drinking alcohol for the month of January. Every person taking part in this study was shown the same information.

We were also interested in exploring whether writing about a personally important value would influence responses to the information. Therefore some of you were asked to write about an important value before reading the information and some of you were asked to write about an unimportant value. You all then answered the same questions about alcohol.

In addition, we were interested in exploring how your personal traits might influence your responses to the information about alcohol. Therefore, the first questionnaire asked you a number of questions designed to assess your personal traits.

If you would like to withdraw your questionnaire now that you know the purpose of the study and/or you would like more information about this study, please contact me (Kerry Fox) via email (K.J.Fox@sussex.ac.uk)

If you would like more information about how to decrease the amount you alcohol you drink, you may find the following websites useful:

Drinkaware (Advice on how to reduce your alcohol consumption): www.drinkaware.co.uk/make-a-change/how-to-cut-down/

NHS Choices (alcohol): www.nhs.uk/livewell/alcohol/Pages/Alcoholhome.aspx

If you would like more information about what services are available to you if you are worried about your levels of alcohol consumption, you may find the following websites useful:

NHS Services: www.nhs.uk/Service-Search/

Correlations between Dependent Variables for the Study Reported in Chapter 5

Appendix D Table 1

Correlations between Dependent Variables in the Study 1 Reported in Chapter 5

	1	2	3	4	5	6	7	8	9	10	11
1. Depth of thought	1.00										
2. Message derogation	-.07	1.00									
3. Negative affect	.25**	-.50	1.00								
4. Intention	.35**	-.21**	.22**	1.00							
5. Identity	-.27**	-.16*	.05	.78**	1.00						
6. Anticipated regret	.35**	-.13	.34**	.66**	.62**	1.00					
7. Attitude	.32**	-.16*	.19**	.66**	.63**	.54**	1.00				
8. Plans for January	.32**	-.06	.36**	.64**	.51**	.58**	.53**	1.00			
9. Response efficacy	-.31**	.11	-.36**	-.36**	-.33**	-.29**	-.46**	-.40**	1.00		
10. Self-efficacy	-.22**	.04	-.61**	-.10	.04	-.26**	-.08	-.30**	.37**	1.00	
11. Coping efficacy	-.11	-.02	-.51**	.01	.16	-.10	-.03	-.15*	.30**	.72	1.00

*$p < .05$, **$p < .01$