

Self-affirmation and motivational interviewing: integrating perspectives to reduce resistance and increase efficacy of alcohol interventions

Phillip J. Ehret^{a*}, Joseph W. LaBrie^b, Craig Santerre^c and David K. Sherman^a

^aDepartment of Psychological & Brain Sciences, University of California, Santa Barbara, CA 93106-9660, USA; ^bDepartment of Psychology, Loyola Marymount University, 1 LMU Drive, Los Angeles, CA 90045-2659, USA; ^cVeterans Affairs Puget Sound Health Care System, Seattle Division, 1660 S. Columbian Way, Seattle, WA 98108-1597, USA

(Received 12 April 2013; final version received 1 September 2013)

To promote efforts at reducing problematic alcohol use and improving health outcomes, the present review proposes an integration of a social psychological approach – self-affirmation theory – with a clinical psychology intervention – motivational interviewing. Motivational interviewing (MI) is a popular empirically-designed treatment approach that has shown moderate success at reducing drinking and improving health, especially with resistant drinkers. Experiments informed by self-affirmation theory have found that people exhibit reduced defensiveness to threatening health messages and increased intentions to reduce alcohol consumption when affirmed. This review focuses on the mechanisms by which self-affirmation reduces resistance and how these mechanisms are complementary to the MI approach. Further, the review outlines suggestions for conducting and integrating self-affirmation into a MI intervention and provides recommendations for future empirical research.

Keywords: self-affirmation theory; motivational interviewing; alcohol interventions; resistance; intervention efficacy; message processing

Most of the things I said and did while I was drinking, I couldn't remember the next day. The last 10 years I did stuff that really shocked me. I was so embarrassed. People would tell me, 'Last night, boy, you can't believe what you said'. And I'm going, 'Did I say that?' The stories bugged the hell out of me. That wasn't like me. I wasn't that guy they were talking about. – Mickey Mantle (Mantle & Lieber, 1994, p. 1)

Mickey Mantle, widely considered one of the best baseball players of all time, abused alcohol to the detriment of his personal, social and professional life. It was not until age 62, after a lifetime of drinking, that he finally sought help, leaving many to wonder why for all those years and after so many regrets, Mickey resisted changing his drinking behaviour.

Psychologists have long sought to intervene with individuals like Mickey Mantle who resist changing their own harmful behaviours. One well-researched and widely used approach for those resistant to change is motivational interviewing (MI). MI is a therapeutic approach encouraging behavioural change in individuals, who are ambivalent

*Corresponding author. Email: ehret@psych.ucsb.edu

about changing their behaviour (i.e., they have reasons both for and against change), or who outrightly are resistant to change. One of the central goals of this therapeutic approach is to defuse and avoid directly confronting clients' resistance to change in order to facilitate decreased drinking (Miller & Rollnick, 2002).

One relevant social psychological approach that addresses resistance to change and has led to positive healthy behavioural change is self-affirmation theory (Steele, 1988). Self-affirmation theory posits that affirming an overall image of self-integrity can decrease individuals' defensiveness (i.e., their desire to protect their self-integrity) and resistance, the behavioural manifestation of defensiveness (Sherman & Cohen, 2006). When people affirm their own self-integrity, a global view of the self as capable, moral, adaptive and efficacious, they engage in more appropriate threat evaluation, message scrutiny and attention to threatening information across a number of health domains including alcohol use (for a comprehensive review of self-affirmation in the general health context, see Harris & Epton, 2009, 2010).

MI arose from clinical experiences, empirical approaches to understanding change and also social psychological theories (e.g., cognitive dissonance, self-perception theory; Miller & Rose, 2009), and self-affirmation theory arose as an alternative explanation to cognitive dissonance and drew on the examples of persistent maladaptive health behaviours, such as smoking (Steele, 1988). Despite MI and self-affirmation theory sharing conceptual roots in both clinical, social and health psychology and previous suggestions of their compatibility (Leffingwell, Nueman, Babitzke, Leedy, & Walters, 2007), neither clinicians nor research psychologists have actively integrated these complementary approaches to advance theory or practice, and it is likely that researchers and practitioners are not fully aware of both perspectives and how they could potentially work together. The current review of relevant empirical literature has three primary goals: (1) to establish that MI is a widely used and effective intervention, but has room for improvement; (2) to demonstrate how self-affirmation effects complement the aims of MI by drawing on research specific to alcohol, as well as other health domains; and (3) to propose how self-affirmation and MI (SAMI) can be combined in an alcohol intervention to increase intervention efficacy. Integrating the theoretical and methodological approaches of MI and self-affirmation would benefit MI theory by providing a more complete, theoretically supported mechanism for understanding and reducing defensiveness and resistance among MI clients, and benefit self-affirmation theory by expanding its application to people contending with the chronic stress and threats stemming from addiction and problem drinking.

Motivational interviewing

MI was developed by clinical psychologists William Miller and Stephen Rollnick as an evidenced-based intervention intended to treat alcohol and drug abuse in clients ambivalent about and resistant to change (Miller & Rollnick, 2002; Miller & Rose, 2009). The MI approach understands behavioural change as a process, and is often conceptually linked with the transtheoretical model (TTM), which posits behavioural change as a process that occurs incrementally across stages of change and is not a 'change or no change' dichotomous outcome (DiClemente & Prochaska, 1998; Prochaska & DiClemente, 1984; see Littell & Girvin, 2002 for discussion of discrete versus continuous models of behavioural change, both of which are compatible with MI). Accordingly, a

MI intervention is successful if a client moves positively through these stages, even if no behavioural changes are observed. Nevertheless, the ultimate goal of MI is to decrease problematic drinking, as this change will lead to positive outcomes (e.g., better health, less relationship strain, fewer legal problems).

MI is a client-centred humanistic behavioural approach that focuses on increasing clients' intrinsic motivation for change across two phases (Miller & Rollnick, 2002). In phase one, the main goal is to increase individuals' motivation for change without raising resistance to change. Counsellors commonly facilitate clients' own explorations of their ambivalence regarding their drinking behaviour and reinforce the clients' reasons for change, thereby increasing clients' motivation to change. In phase two of MI, the focus becomes strengthening clients' commitment to change that they developed in phase one, and establishing plans for change (Miller & Rollnick, 2002). Central to MI across both phases are four core principles: (1) expressing empathy through seeking to understand the clients' perspectives without judgement; (2) accentuating discrepancy in clients' behaviours and values to increase motivation for change; (3) 'rolling with resistance' by avoiding arguments and not challenging clients; and (4) supporting self-efficacy by affirming clients' abilities to enact the desired behavioural change (Miller & Rollnick, 2002). Taken together, these four principles make up the 'spirit of motivational interviewing' (see supplemental data 1: Table 1). Although MI did not evolve from a specific theory, Miller and Rose (2009) have recently identified two main theoretical mechanisms of MI that are consistent with these core principles. The first is accurate empathy and positive regard from the counsellor, and the second is evoking or sustaining change talk through specific MI consistent techniques (e.g., open ended questions). The former is often referred to as relational factors and the latter technical factors (Miller & Rose, 2009). Since its inception in 1980s, MI has become a popular intervention. As of July 2013, Miller and Rollnick's (2002) definitive book on MI had been cited over 5000 times. Further, MI is utilised worldwide, with training manuals translated into over 38 languages (Sciacca, 2009).

In contrast to other popular alcohol treatment programs that stress complete abstinence from alcohol (e.g., Alcoholics Anonymous; Norwinski, Baker, & Carroll, 1992), MI is a harm-reduction approach that focuses on reducing drinking and associated consequences (Miller & Rollnick, 2002). However, MI does not preclude – and is compatible with – abstinence if that is desired by the client. Research has suggested that harm reduction approaches are as effective in reducing alcohol-related consequences as abstinence-only approaches (Marlatt & Witkiewitz, 2002). Although MI has been shown to increase individuals' readiness to change, it is only 10–20% more effective than no treatment in reducing actual alcohol consumption, which is comparable to other common alcohol abuse treatments (Lundahl & Burke, 2009). In other health domains (e.g., diet and exercise, diabetes and oral health), MI has also been shown to be more effective than no treatment, yet, effect sizes vary greatly, with modest effects being more commonly observed than large effects (for a review see Martins & McNeil, 2009).

Resistance in MI interventions

Resistance to behavioural change is a major barrier to effective alcohol interventions and it is commonly encountered during MI interventions (Chamberlain, Patterson, Reid, Kavanagh, & Forgatch, 1984; Project MATCH Research Group, 1997). Following the

third tenet of MI, a clinician should not combat or directly confront client resistance (e.g., arguing against clients' perspectives) and instead should accept resistance as a normal part of the change process (Miller & Rollnick, 2002). Adherence to this third tenet of avoiding and defusing resistance is important as greater levels of client resistance result in decreased intervention efficacy (Apodaca & Longabaugh, 2009; Miller, Benefield, & Tonigan, 1993). Resistance is conceptualised as the opposite of 'change talk' (i.e., participants voicing their own reasons for change; Miller & Rollnick, 2002), which is the desired outcome and an established mechanism of MI intervention success (Apodaca & Longabaugh, 2009; Miller & Rose, 2009).

Differing from traditional confrontational intervention techniques (Miller & Rollnick, 2002; see also Bien, Miller, & Tonigan, 1993), MI considers counsellors as largely in charge of controlling clients' resistance levels, and thus, places the responsibility of avoiding or reducing resistance with the counsellor (Miller & Rollnick, 2002; Miller et al., 1993; Patterson, Chamberlain, & Reid, 1982). This is a major difference from previous approaches that often blame clients for their resistance, and thus, their inability to change. From the MI perspective, ambivalence is considered to be a normal aspect of human nature, and frequently occurs during the process of behavioural change. Many clients are well aware of the negative consequences of their behaviours, yet when others suggest more adaptive alternatives, this can challenge their personal freedom and elicit psychological reactance. A counsellor or a well-meaning family member can unintentionally assume an adversarial role in which he or she is arguing *for* reasons to change and the ambivalent client finds it natural to argue *against* those reasons (Miller & Rollnick, 2002). Effective diffusion and avoidance of resistance is most likely to happen when counsellors adopt a collaborative rather than confrontational stance, and when they use an empathic mode of exploring and resolving the ambivalence as prescribed by the MI approach. This use of empathy is proposed to be one of the mechanisms of MI on behavioural change (Miller & Rose, 2009). Since resistance to decreasing alcohol consumption is both common among individuals with drinking problems (Chamberlain et al., 1984; Miller et al., 1993) and a barrier to MI intervention success (Apodaca & Longabaugh, 2009), we propose that incorporating self-affirmation theory, which has been empirically shown to decrease resistance, into MI interventions may result in a more efficacious intervention approach.

Self-affirmation theory

Self-affirmation is the process of an individual affirming his or her own self-relevant values, actions or attributes. Following from the basic tenets of self-affirmation theory (see supplemental data 1: Table 2), individuals are motivated to maintain their self-integrity, a global view of the self as capable, moral, adaptive and efficacious (Steele, 1988; see also Aronson, Cohen, & Nail, 1999; Sherman & Cohen, 2006). They maintain self-integrity by drawing on the identities that constitute who they are and the domains that are most self-relevant (e.g., one's role as a parent, one's identity as an American, the value of good health). Individuals' self-integrity can be threatened, however, by stressful events and negative information that impugn one of these central domains. For example, a health message suggesting that their current behaviours are not adaptive, such as a message arguing that drinking poses a risk to health, can instigate a wide range of defensive cognitive strategies to reduce or eliminate the self-threat (Knowles & Linn, 2004; Kunda, 1987). These defensive strategies are part of an individual's 'psychological

immune system' that helps maintain psychological equanimity in the face of threat (Gilbert, Pinel, Wilson, Blumberg, & Wheatly, 1998), and can lead to a narrowing of perspective as people seek to neutralise the threat. Although these defensive processes may be beneficial in some contexts (see Gilbert et al., 1998), they can be harmful because they are barriers to the acknowledgement of risk and intention to change necessary for behavioural change. Recalling his drinking, Mickey Mantle said, 'I thought if I was drinking wine, it wasn't really drinking' (Mantle & Lieber, 1994, p. 1). Despite being quite aware of the consequences of his drinking, he adopted defensive strategies such as denial that his drinking even counted as 'drinking'.

Self-affirmation provides an alternative way to protect self-integrity that does not entail denial, rationalisation and other defensive behaviours (Steele, 1988). Although there are many means by which people affirm themselves, the most common methodology has people writing about their core values during a time of threat (Cohen & Sherman, *in press*). Values are important because they serve as the standards by which people evaluate their self-worth and define who they are (Rokeach, 1973). This activity provides an opportunity for people to affirm their self-worth by reflecting upon and expressing what is most cherished and important to them, values such as religion, activities such as music, or close relationships such as family and friends. By affirming an individual's self-integrity in a domain outside of the threatened domain in this manner, an individual's self-integrity is reinforced by broadening his or her perspective to include other valued aspects of his or her self, decreasing the perceived level of threat and need to protect their self-integrity (Sherman & Cohen, 2006; Steele, 1988; Wakslak & Trope, 2009). Individuals affirming their own core values can help sustain a personal narrative of integrity in times of threat by reminding themselves of their sources of self-worth that do not hinge on the threatened domain. This narrative of integrity can then shape the ongoing processing of subsequent threats, reducing their capacity to overwhelm the self and prompt stress and defensive resistance (Cohen & Sherman, *in press*; Sherman et al., 2013).

It is important to note that a degree of self-affirmation likely occurs in some MI interventions. For example, the guiding principles of MI suggest 'unconditional positive regard' for clients and 'value towards client' (Miller & Rollnick, 2002), providing an environment in which the clients may self affirm (e.g., a client, not the counsellor, provides reasons why family is important to him). However, this does not mean that all clients engage in self-affirmation. The self-affirmation approach provides a medium for all clients to affirm themselves, and may lead to reduced client resistance and increased MI intervention efficacy. Moreover, as we shall discuss, the values affirmation methodology developed within the self-affirmation theory could provide a novel means of affirmation with a focus on values that have not been considered within the MI approach.

Reducing threat to reduce resistance in MI interventions

Resistance arises in response to a threat, to the extent that the threat attacks a valued aspect of an individual's self-integrity (Steele, 1988). By affirming the self, perceptions of threat to self-integrity can be decreased, and thus resistance to threats will similarly decrease (Sherman & Hartson, 2011). Self-affirmation can preclude potential resistance to threatening information and also reduce resistance to existing threats (Harris & Epton, 2009; Sherman & Cohen, 2006). The finding that self-affirmation can reduce resistance to

both new and existing threats is an important finding, because individuals in MI interventions may already exhibit high levels of resistance before beginning treatment, or resistance may arise during MI intervention sessions. Pre-existing resistance may arise among people, for example, with a court order to complete treatment, which they do not agree with. Additionally, resistance may arise during a counselling session for a number of reasons, such as the presentation of information indicating that clients' drinking behaviour is indeed maladaptive.

Reducing existing resistance

Many individuals entering treatment for alcohol do not do so solely at their own volition. As a result, there can be a mismatch between their behaviours (e.g., attending therapy to address a drinking problem) and their attitudes (e.g., I do not have a drinking problem). This discrepancy produces cognitive dissonance, an aversive state, which the individual is motivated to resolve (for review see Aronson, 1968; Cooper, 2007; Festinger, 1957; Harmon-Jones & Mills, 1999). Defensive cognitive strategies, such as denial can be enlisted to resolve this aversive state (Gosling, Denizeau, & Oberlé, 2006), and thus, can result in clients' observed resistance. However, when individuals who are experiencing cognitive dissonance self affirm, they are less likely to engage in the distortions and rationalisations nor report discomfort (e.g., negative emotions) associated with cognitive dissonance (Matz & Wood, 2005; Steele, 1988; Steele & Liu, 1983). Therefore, already resistant clients may experience a significant reduction in resistance after affirming the self, as self-affirming reduces the discomfort of cognitive dissonance, and it is this discomfort that motivates resistant behaviours and defensive cognitions. Thus, self-affirmation has potential to be an effective means of reducing client resistance that has arisen from any number of potential factors prior to their first intervention session.

Reducing resistance from health messages or feedback

Regardless of clients' levels of resistance going into therapy, there are many opportunities for threat to arise during therapy. Although skilled MI counsellors will attempt to avoid evoking client resistance, simply asking about the behaviours in question can be threatening to clients and produce resistance. Another common source of resistance in MI interventions is the presentation of health messages or personalised feedback on clients' drinking. Although not every MI intervention session necessarily involves the presentation of messages or personalised feedback (e.g., articles on the health risks of drinking, the client's alcohol-use risk scores), counsellors often present health information with the permission of the client (so as to avoid resistance from unwanted information; Miller & Rollnick, 2002). Further, many MI interventions are combined with supplemental approaches that involve the presentation of outside information (e.g., feedback from the Drinker's Check-Up; Burke, Arkowitz, & Menchola, 2003; DiClemente, Marinilli, Singh, & Bellino, 2001). Considering the presentation of messages is common in MI, self-affirmation may be particularly effective in addressing resistance as affirming the self buffers individuals against future threats, and can thus reduce resistance to the threatening information. Specifically, we will review evidence pointing to beneficial effects from self-affirmation indicative of reduced resistance, such as increased general and personal message acceptance, reduced message derogation, increased personal risk perceptions, increased message scrutiny and increased attention to and acceptance of high-threat information.

Increased message acceptance

Dismissing message content and being closed-minded to threatening information are common forms of resistance; thus acceptance of message content signifies reductions in resistance. Message acceptance has been investigated primarily by presenting an informational article linking a risk behaviour (e.g., drinking alcohol) with negative consequences (e.g., liver disease) after participants completed either a self-affirmation or control activity. Research has demonstrated that participants who self-affirmed before receiving threatening health information reported greater general message acceptance (e.g., reported less scepticism and believed the threatening information to be more justified, less misleading and better supported) than those who did not self affirm (Crocker, Niiya, & Mischkowski, 2008). Further, affirmed individuals also have been found to report stronger beliefs in presented information than those not affirmed (Armitage, Harris, Hepton, & Napper, 2008; Reed & Aspinwall, 1998; Sherman, Nelson, & Steele, 2000, Study 1; van Koningsbruggen, Das, & Roskos-Ewoldsen, 2009).

Although general message acceptance is an important outcome to consider, personal message acceptance may be more instrumental to behavioural change as it indicates that individuals recognise the information's relevance to themselves instead of a general population (Weinstein, 1988). An individual might accept the conclusions of a health message, but may not personally accept the information (e.g., 'I believe there is a link between drinking and liver cancer, but this is not relevant to me as I do not drink frequently enough'). One study that presented heavier drinking females with health messages linking alcohol use and breast cancer found that affirmed participants more easily imagined themselves experiencing breast cancer from drinking than non-affirmed participants (Harris & Napper, 2005). Other research has demonstrated that affirmed participants find health messages more relatable (Sherman et al., 2000, Study 2) and more personally relevant (Harris, Mayle, Mabbott, & Napper, 2007) than non-affirmed individuals.

Decreased message derogation

Researchers have also evaluated message derogation, another form of resistance. Considering alcohol use, one study found that non-affirmed drinkers thought the health message about the risk of alcohol consumption was overblown and inaccurate; self-affirmation reduced this message derogation (Armitage, Harris, & Arden, 2011). Other studies have found similar results in the context of sunbathing and diabetes (Jessop, Simmonds, & Sparks, 2009; van Koningsbruggen & Das, 2009). Thus, self-affirmation could reduce the potential derogation of health messages or feedback presented to clients in actual MI interventions.

Increased message scrutiny

Research demonstrates that affirmed individuals more deeply scrutinise threatening health messages. In one study comparing a strong versus a weak health message linking caffeine consumption to breast cancer, affirmed individuals only demonstrated positive affirmation effects (i.e., feelings of vulnerability and increased intentions to reduce caffeine consumption) when reading the strong message. This finding indicates that self-affirmation increases message scrutiny, such that weak messages will be appropriately dismissed, and consequently, are unrelated to meaningful outcomes (e.g., intentions to change behaviour; Klein et al., 2011; see also Correll, Spencer, & Zanna, 2004). Given

that self-affirmation does not simply evoke a general agreeableness to messages and instead increases message scrutiny, affirmed MI clients may find health messages advocating for decreased drinking to be more credible, which may strengthen clients' motivations for decreasing alcohol consumption.

Increased attention to high-threat information

Affirming the self can also lead individuals to spend more time attending to the high-threat content of a message. For example, moderate alcohol consumers who were not affirmed showed a bias away from threatening words presented in a health communication; by contrast, affirmed moderate drinkers oriented more quickly to the threatening words (Klein & Harris, 2009, see also van Koningsbruggen et al., 2009). However, it is important to note in the previous study that the affirmation effect was weaker for the extremely heavy than for the moderate drinkers; this may be indicative of the limits of a stand-alone self-affirmation intervention, signalling the need to pair self-affirmation with other intervention approaches such as MI. Consider again the highly threatening information that long-term alcoholics like Mickey Mantle were receiving: that their lives were at risk by their continued drinking behaviour. Attending to high-threat content and finding it more convincing may be particularly beneficial for people who face dire risk and are in the greatest need of change. Further, the acceptance of highly threatening messages by affirmed drinkers is particularly noteworthy, as previous research has demonstrated that unaffirmed drinkers, when presented with a highly threatening message display psychological reactance resulting in increased intentions to consume and greater consumption of alcohol (Bensley & Wu, 2006).

Increased risk perceptions

Maladaptive drinking behaviours often place individuals at increased risk for negative consequences (e.g., financial strains, legal troubles, serious diseases and even death). Yet, resistant individuals may deny these risks in order to minimise the threat to their self-views as capable and adaptive individuals.

Research has examined perceptions of increased risk in the alcohol domain specifically. After reading a health message linking alcohol use to breast cancer, affirmed women drinkers perceived their own risk of breast cancer to be higher than nonaffirmed women drinkers (Harris & Napper, 2005; Klein, Harris, Ferrer, & Zajac, 2011). A second study demonstrated that affirmed drinkers reported themselves to be at greater risk of alcohol-related consequences after viewing a health message on the risk of alcohol consumption compared to nonaffirmed drinkers (Armitage et al., 2011). In addition to documenting the link between affirmation and increased self-risk perceptions, other research has shown that self-affirmation can decrease comparative risk differences, that is, individuals' risk perception is more similar to their perception of others' risk (Klein, Blier, & Janze, 2001; Napper, Harris, & Epton, 2009, Study 3; Sherman et al., 2009, Study 3). The resulting increase in personal risk perceptions is not only indicative of decreased defensive processing and resistance, but may also be a strong motivator for behavioural change (Sheeran, Harris, & Epton, 2013). Additionally, increased risk perceptions can be used by counsellors to further illuminate the discrepancy between clients' behaviours and resulting consequences and their values, and thereby serve the second principle of MI. For example, increased health risk perceptions may help a client

to see more clearly how his drinking puts his family (assuming family is identified as an important value) at financial risk from potential medical bills or legal trouble.

Although increases in perceived threat can be beneficial to individuals who originally perceived themselves to be at little to no risk, it is also important that risk perceptions are appropriately calibrated to actual risk levels, such that individuals do not overestimate their risk leading to unjustified fear or fail to increase their risk perceptions enough, leaving them vulnerable to relevant risks. Griffin and Harris (2011) compared an alarm model to a calibration model to determine if self-affirmation uniformly increased risk perception for those being affirmed, or if it selectively increased risk perception for those actually at an elevated risk level. Female seafood consumers read a message linking seafood consumption to increased mercury ingestion and the resulting consequences. The results supported the calibration model, where self-affirmation increased risk perceptions for those at risk and did not increase risk perceptions for those at little to no risk, indicating that self-affirmation helps individuals appropriately calibrate their risk perceptions (Griffin & Harris, 2011). Helping clients realise the risks involved with their drinking levels is an important aspect of successful MI interventions, as the consequences resulting from the risks (e.g., loss of employment, failing relationships, medical problems) are likely strong motivators of behavioural change. Self-affirmation could benefit clients participating in MI interventions by appropriately increasing their awareness of the risks of alcohol consumption, providing more potential motivators for client change. Building appropriate levels of motivation and self-efficacy to enhance behavioural change (the fourth principle of MI) is important, as inadequate motivation and efficacy may lead to discouraging failures, while building unneeded motivation and efficacy may be unduly stressful and challenging, making behavioural change more difficult.

Effects of self-affirmation on behavioural intentions and behavioural change

Beyond the previously reviewed research that demonstrated how self-affirmation reduced resistance observed in a variety of ways (e.g., increased message acceptance and scrutiny, reduced message derogation, increased personal risk perceptions and increased attention high-threat information), self-affirmation has also been shown to increase behavioural intentions and promote health behavioural change (Cohen & Sherman, *in press*). However, research investigating these behavioural effects of self-affirmation is limited. Central to the MI approach is the conceptualisation of behavioural change as a process that proceeds in stages with intentions being a precursor of behavioural change (Miller & Rollnick, 2002), and thus in the context of MI interventions, intentions for behavioural change are nearly as relevant and worth investigating as actual behavioural change.

Intentions

Self-affirmation generally increases intentions to decrease drinking (Harris & Napper, 2005; Scott, Brown, Phair, Westland, & Schütz, 2013) and engage in other healthier behaviours (Armitage et al., 2008; Harris et al., 2007; Napper, Harris, & Klein, *in press*; Sherman et al., 2000; van Koningsbruggen & Das, 2009). Additionally, self-affirmation is related to predictors of intentions, such as positive attitudes towards certain behaviours (Jessop et al., 2009), higher levels of perceived control (Harris et al., 2007; Reed & Aspinwall, 1998) and increased self-efficacy (Epton & Harris, 2008; Jessop et al., 2009).

Thus, the evidence is persuasive and diverse for the power of self-affirmation to foster intentions to change health behaviour (see Harris & Epton, 2009).

Behavioural change

Studies applying self-affirmation to health-related behaviours have found both short-term and long-term health behavioural changes. Short-term behavioural effects have been found across a number of health domains (e.g., safe-sex practices, sunbathing; for review, see Harris & Epton, 2009, 2010; also, Napper et al., *in press*). In each domain, the increase in pro-health behaviour is certainly beneficial, but it is important to note that these behavioural changes are only indirectly related to the actual health behaviours in question (e.g., post-intervention acceptance of sunscreen sample instead of sunscreen use; purchase of condoms instead of condom use).

Behavioural change across time has been examined in a number of health domains. One study demonstrated affirmed drinkers decreased their alcohol consumption compared to nonaffirmed drinkers one month after participating in the experiment (Armitage et al., 2011). Two other studies reported that affirmed participants ate more fruits and vegetables for seven days after receiving the self-affirmation manipulation than nonaffirmed participants (Epton & Harris, 2008), and that affirmed women participants weighed less and had smaller waistlines than nonaffirmed participants 2.5 months later after self-affirming (Logel & Cohen, 2012). Additionally, self-affirmation has been successfully incorporated into three field studies, resulting in increased physical activity in high-risk populations (Mancuso et al., 2012; Peterson et al., 2012) and medication adherence (Ogedegbe et al., 2012) one year after initiation of the interventions. However, it should also be noted that some other studies have failed to find significant behavioural changes one week to one month after participants received the self-affirmation manipulations (Harris & Napper, 2005; Harris et al., 2007; Reed & Aspinwall, 1998; see Harris & Epton, 2010 for discussion). It is important for interventions that potentially combine MI and self-affirmation to capture behavioural change in health contexts over longer periods of time and to consider potential moderators that could determine who is most benefited by the intervention.

Moderators of self-affirmation effects

Risk level

Individuals in formal MI treatment programs likely have more severe behavioural problems and corresponding elevated risk levels from their excessive alcohol use. Studies investigating the moderating effects of risk level, as measured by behaviour (e.g., numbers of drinks consumed, cigarettes smoked), have found that self-affirmation may be more effective for persons with moderate to high risk as opposed to those at lower risk levels (Armitage et al., 2008; Harris & Napper, 2005; Harris et al., 2007; Schüz, Schüz, & Eid, *in press*; Scott et al., 2013). However, other studies have found that self-affirmation may only show effects at more moderate than at high-risk levels (Klein & Harris, 2009; van Koningsbruggen, 2009). It is important to note that the extant studies analysing the moderating role of risk level have samples comprised of non-clinical adults or college students. Thus, these studies can only provide limited support for the role of risk in clinical populations, particularly because risk (i.e., levels of alcohol consumption) is potentially much higher in clinical populations. The greater levels of risk may be associated with more entrenched behaviours and addictions that are more difficult to

change, although self-affirmation paired with a positive mood induction was effective with a clinical population of patients diagnosed with hypertension (Ogedegbe et al., 2012). However, the challenges presented by high-risk clinical populations do not necessarily indicate that self-affirmation would not be effective with these individuals, but instead present an opportunity for both MI and self-affirmation to work together to overcome this resistance, thereby enhancing MI's established ability to decrease resistance (see Burke et al., 2003; Lundahl & Burke, 2009) and increase intervention efficacy. Although more research is needed to clarify the exact moderating role of risk level, research does suggest that for moderate risk levels and perhaps for higher risk levels, self-affirmation can foster beneficial responses.

Readiness to change

Self-affirmation theory may also benefit from future research incorporating the theoretical understanding of moderators of behavioural change that is emphasised in the MI approach. One explanation for the lack of observed behavioural changes in the health domain is that none of the self-affirmation studies discussed have considered participants' stage of change. The MI approach commonly understands change in accordance with the TTM that describes behavioural change as a process that occurs across a continuum of 'stages of change' (DiClemente & Prochaska, 1998; Prochaska & DiClemente 1984). The first stage is the pre-contemplation stage, in which individuals have not thought about changing and resist information or attempts that promote behavioural change, and end with maintenance of recent behavioural change (for review, see DiClemente & Prochaska, 1998). It is likely that participants in the previously discussed health studies assessing behavioural changes were in differential stages of change as resistance to behavioural changes in these domains are common (this may be particularly true about drinking). As a result, the effects of self-affirmation may have varied as a function of individuals' stage of change. For some, the self-affirmation may have prompted actual health behavioural changes and for others, self-affirmation may have only increased intentions for change. From the perspective of the TTM and the MI approach, both of these are beneficial outcomes since they move individuals closer to enduring behavioural change, yet, without considering where the person is in the change process, it is difficult to determine the different effects of self-affirmation. Thus, studies incorporating self-affirmation and MI together need to determine if pre-MI affirmation improves readiness to change more than MI alone.

Additional benefits of self-affirmation

Incorporating self-affirmation into MI could lead to beneficial outcomes through additional channels beyond decreasing resistance and facilitating message acceptance. Self-affirmation has also been shown to reduce stress levels, and considering the highly stressful nature of alcohol reduction, this may also support MI intervention efficacy. Physiological stress responses to both acute (e.g., a speech) and naturalistic stressors have been reduced via affirmation (e.g., preparing for an exam; Creswell et al., 2005; Sherman, Bunyan, Creswell, & Jaremka, 2009). Self-affirmation's ability to reduce stress may help clients to maintain behavioural change and make the change less aversive, as stress has been shown to be related to the initiation of alcohol use, abuse, and dependence, as well as relapse in those recovering from alcohol abuse (for review, see Brady & Sonne, 1999). Additionally, research suggests that self-affirmation may help facilitate self-control both

by freeing up cognitive resources enabling greater self-control during subsequent demanding tasks (Logel & Cohen, 2011) and by reducing the negative effects of psychological resource depletion on subsequent self-control tasks (Schmeichel & Vohs, 2009). Increased self-control can help facilitate behavioural change (e.g., resisting the urge to drink; Muraven, Collins, & Neinhuis, 2002).

Summary of self-affirmation effects and implications for theory

The empirical review of self-affirmation theory demonstrates that self-affirmation reduces defensiveness, manifesting itself in numerous beneficial effects: greater general and personal message acceptance, reduced message derogation, increased risk perceptions, greater message scrutiny, increased attention to and acceptance of high-threat information, greater intentions for behavioural change and actual health behavioural change. Although research supports self-affirmation's ability to reduce resistance, which directly benefits the third principle of MI (i.e., 'rolling with resistance'), self-affirmation also complements the other three principles of MI. When clients choose to complete the self-affirmation task, we encourage counsellors to capitalise on the information the client provides to more effectively and accurately express empathy with the client, as this supports the proposed relational mechanism of MI (Miller & Rose, 2009) and is consistent with the first principle of MI. Further, the decreased defensiveness in regards to presented health messages and feedback is beneficial beyond clients' more positive response to the message content (e.g., finding a message more believable). Counsellors can increase the efficacy of technical factors, a second mechanism of MI (Miller & Rose, 2009), by using the positive responses to the presented messages to further emphasise discrepancies in clients' behaviours and values (MI's second principle) and effectively build self-efficacy for behavioural change (MI's fourth principle). By incorporating a self-affirmation component into MI interventions, MI counsellors may be able to more effectively reduce clients' resistance to change, and thus more effectively intervene with and ultimately decrease clients' problematic alcohol use.

Self-affirmation theory will also benefit from the integration of self-affirmation into MI interventions. When taken to the field, self-affirmation in health (Creswell et al., 2007), as well as education (Cohen, Garcia, Apfel, & Master, 2006; Sherman et al., 2013), has led to a greater development in understanding the psychology of change (Cohen & Sherman, *in press*). Thus, moving to clinical populations abusing alcohol would enhance the theoretical understanding of how people change their behaviour and the potential role for affirmation in aiding this.

SAMI: integrating self-affirmation and motivational interviewing (MI)

Considering the range of MI therapy designs and self-affirmation manipulations, we cannot provide a universal procedure for integrating self-affirmation into MI interventions. Nevertheless, we provide an overview of self-affirmation manipulations, recommendations for self-affirmation administration, and a general example of self-affirmation integration with a brief MI session that could potentially be adapted for MI interventions.

Self-affirmation manipulations are commonly brief exercises, and a number of self-affirmation manipulations are now available (for review, see McQueen & Klein, 2006; for more recent alternatives, see Armitage et al., 2011; Napper et al., 2009). Common to all self-affirmation manipulations, the counsellor provides the instructions and means for the client to affirm himself/herself. Although it is beneficial for researchers and practitioners

to review the available and empirically supported self-affirmation manipulations to select the one that fits best with the design of a given intervention, we suggest the use of a value essay self-affirmation manipulation (see Cohen & Sherman, *in press*). In this task, participants rank multiple values (e.g., sense of humour, social skills, athletics, creativity, relationships with friends and family) in order of personal importance. Next, participants write a brief essay about their highest ranked value (see supplemental data 2 for an example self-affirmation manipulation). This procedure requires around ten to fifteen minutes to complete, has few barriers to implementation, and has negligible financial cost. Furthermore, it can be administered to a single individual or to each individual in a group intervention. There is also a secondary benefit of the self-affirmation essay approach; by allowing individuals to write about self-chosen important values, a counsellor can use this opportunity to capitalise on the first principle of MI and express empathy (through various techniques such as 'reflective listening', see Miller & Rollnick, 2002) to demonstrate non-judgemental understanding of clients' values.

One recommendation is to affirm clients at the beginning of a MI intervention. By providing the affirmation at the beginning of an intervention, clients do more than complete a paper-and-pencil manipulation. They are given the opportunity to engage in an act that affirms their adequacy at an important point in therapy because, as previously discussed, self-affirmation can serve to reduce prior resistance and inoculate against future threats, thereby decreasing the potential for resistance to be present or to arise during the session. It also has the additional benefit of providing an immediate opportunity in the intervention for the counsellor to express empathy (e.g., 'I see that you said family is an important value for you.'). Another important component of successful self-affirmation is affirming the self in a domain outside of the threat. Affirming the threatened domain (e.g., health) serves to increase the personal importance of the threatened aspect of self and more narrowly focuses an individual's perspective to just the threatened self aspect (Aronson, Blanton, & Cooper, 1995; Sivanathan, Molden, Galinsky, & Ku, 2008). For example, if you were to affirm a drinker's positive health behaviours beyond drinking, a threatening health message about liver disease (e.g., you should decrease your drinking) would likely lead to more ardent resistance to the message as his or her perspective was narrowed to his or her other positive health behaviours. Affirming another domain important to the individual but not linked to the threat, such as this individual's charitable works, could serve to broaden his or her perspective, and thus decrease the perceived threat from the health message (Sherman & Cohen, 2006; Sherman & Hartson, 2011; Wakslak & Trope, 2009). Finally, it is important to point out that in social psychological intervention studies, the affirmation is typically introduced in descriptive and not psychological terms (e.g., as a 'writing exercise' and not 'a defensiveness-reducer'). One purpose of this general explanation is that too much awareness on the part of an individual about the purpose and effect of the affirmation may attenuate its effectiveness and perhaps prompt reactance (Sherman et al., 2009). Indeed, intervention researchers have noted in general that the effect of social psychological interventions may lay in their psychologically stealthy nature (Yeager & Walton, 2011). In introducing the task, we encourage counsellors to ask the permission of the client to complete a task about personal values; this would likely not seem out of place in an MI intervention as different exercises are commonly used by counsellors during MI session (e.g., the decisional balance worksheet). It is important to emphasise the client's choice in what value to write about, as perceived choice and autonomy has been shown to

counteract potential negative effects of affirmation awareness (Silverman, Logel, & Cohen, 2013).

An additional possibility for incorporating the self-affirmation exercise into MI would be to identify two highly related values from the client's self-affirmation questionnaire (based on the values chosen by the client). One could be used for the affirmation exercise to bolster self-worth in a domain unrelated to the threat. The second could be used throughout the MI intervention as a fulcrum for change. For example, a clinician working with Mickey Mantle could have him affirm himself in regards to his charitable endeavours (if that was an important value), and then have him identify how drinking affects his relationships with friends and family (using that value as a motivational fulcrum for change).

Based on our recommendations and suggested self-affirmation manipulation, we suggest that a values essay self-affirmation task be given to MI clients before any intervention dialogue takes place. By administering the self-affirmation task at the beginning of the session, existing and potentially forthcoming resistance could be minimised. The goal of the affirmation would be to help people sustain a narrative of self-integrity by enabling them to draw on their strengths and values, such that they can serve as a catalyst for the change throughout the MI process (Cohen & Sherman, *in press*). For clients attending multiple sessions, booster self-affirmation manipulations could be conducted if the counsellor detects or anticipates an increase in client resistance (multiple, varied affirmations have been administered successfully as part of education interventions (Sherman et al., 2013)). We also recognise that MI is employed by clinicians in less formal ways than a specific evidence-based intervention or technique; for many the principles of MI infuse the context of a therapy encounter (e.g., empathic attunement, honouring ambivalence and rolling with resistance) and are used in conjunction with other therapeutic skills and behavioural change-oriented techniques. Therefore, we note that the principles of self-affirmation theory can also be integrated with MI in less formal ways, such that, when a clinician encounters resistance from a therapy client then the clinician may consider ways that the client can be affirmed in other domains beyond the threatened area.

Future research directions

Given the shared goals of both self-affirmation and MI in promoting behavioural change and the shared theoretical role of motivation in both processes (Miller & Rose, 2009; Sherman & Hartson, 2011), the necessary next step, broadly speaking, is to empirically investigate the efficacy of a self-affirmation task integrated into a MI intervention. We encourage collaborations between clinical psychologists focusing on treatment and social psychologists with research interests in psychological interventions to conduct randomised control trials to carefully test and develop the ideas proposed here. This collaboration will be particularly important as there are many types of MI interventions, ranging in size (i.e., individual to group sessions, duration and number of sessions, as well as degree of adherence to MI principles). Additionally, researchers from both fields will need to continue to explore the theoretical relationship between both MI and self-affirmation, as new research emerges from these active research areas. For example, self-affirmation theory has helped foster an understanding of the psychology of change (Cohen & Sherman, *in press*) that will be prove beneficial to practitioners and theorists promoting change from the MI perspective. Considering the shared goals of

self-affirmation and MI, we believe that self-affirmation will be beneficial to integrate into a range of MI interventions, and it will require active collaboration from both social, clinical and health psychologists to design the most effective interventions. Additionally, it should be noted that the self-affirmation may be particularly advantageous depending on the nature of the MI intervention. For example, self-affirmation may be especially useful in MI interventions that involve feedback or informational materials, as well as in brief, single session MI interventions where expedient means of reducing resistance are particularly beneficial.

Limitations and issues to consider

Despite the potential synergy between self-affirmation and MI, there are important limitations to consider. First, although there are many demonstrations of affirmation's efficacy in increasing message acceptance and scrutiny, decreasing message derogation and increasing attention to high-risk information, it is important to point out that not all self-affirmation experiments have found increases in health behaviour intentions or changes in actual health behaviour (see Harris & Epton, 2009 for review). Other self-affirmation research has also failed to find decreased resistance among affirmed participants (Dillard, McCaul, & Magnan, 2007; Fry & Prentice-Dunn, 2005; Zhao, Peterson, Kim, & Rolfe-Redding, 2012; see Cohen & Sherman, *in press*). However, these null findings may be the result of unsuccessful affirmation manipulations (Dillard et al., 2007, Fry & Prentice-Dunn, 2005) or low statistical power, as key comparisons were in the predicted direction (Dillard et al., 2005; Zhao et al., 2012). Additionally, most studies are usually conducted with college students or non-clinical populations, which may have lower levels of resistance to behavioural change compared to individuals enrolled in formal treatment programmes. It is also necessary to consider the target behaviour of the intervention. MI has evidenced good success in changing alcohol and drug use (Burke et al., 2003; Lundahl & Burke, 2009) leading us to suggest it is the best candidate behaviour for integration with affirmation. Although evidence suggests that MI is an effective treatment of other problematic behaviours (e.g., HIV-risk behaviours, diet and exercise, smoking cessation), results in these domains are mixed (Burke et al., 2003). Nevertheless, a joint self-affirmation and MI could prove effective in other health domains, but it is likely that interventions must be tailored to each behavioural domain for maximal efficacy. Finally, the potential benefits of self-affirmation to clinical approaches are not limited to MI interventions. Clinical and social psychologists should engage in active collaborations to explore the utility of self-affirmation with other clinical approaches.

Conclusion

Behavioural change is most challenging when individuals are defensive and actively resist attempts aimed at promoting behavioural change. Mickey Mantle had been approached by numerous family members and friends to seek treatment for his drinking, and he drank enough to develop liver disease. Yet, it was not until he was 62 years old, after 42 years of drinking, that he had the motivation to pursue sobriety (Mantle & Lieber, 1994). Clinical practitioners have had success using MI with highly resistant individuals by avoiding and minimising this resistance to promote behavioural change (Miller & Rollnick, 2002). Nevertheless, resistance remains a major obstacle to behavioural change.

By reviewing the empirical literature on the effectiveness of self-affirmation interventions for reducing defensiveness, we illustrated how the integration of self-affirmation into a MI intervention could potentially increase intervention efficacy by actively reducing existing resistance and protecting against forthcoming resistance. Affirmations act as catalysts (Cohen & Sherman, *in press*) so that other factors in the environment can take hold. By reducing resistance, counsellors can more effectively use technical skills (e.g., illuminating discrepancies to elicit change talk) and employ more accurate empathy (e.g., reflecting on the client's important values), each being proposed mechanisms of MI on behavioural change (Miller & Rose, 2009). Additionally, we suggest secondary benefits of the integration of self-affirmation into MI interventions given the relative ease of incorporating a self-affirmation component, the stress reducing effects of self-affirmation, and the increased efficacy of self-affirmation on those at higher risk levels. Finally, these benefits come with little financial cost, and time lost to administering the self-affirmation could be made up if resistance is indeed attenuated. In sum, self-affirmation has the potential to provide numerous benefits that could make MI interventions even more efficacious.

Although MI and self-affirmation theory share conceptual roots in both clinical and social psychology, clinicians and social psychologists have not actively integrated these complementary approaches to advance theory or practice. Our review significantly extends the initial suggestion to include self-affirmation in MI (Leffingwell et al., 2007), arguing for a wide range of beneficial effects resulting from the pairing of self-affirmation with MI and detailing the design of a hybrid self-affirmation-MI intervention. By joining the research and theory from both social and clinical psychology, we argue based on available empirical research that the integration of self-affirmation into MI could result in a synergistic relationship and a promising approach for both theoretical advancement and health behavioural change.

Supplemental data

Supplemental data for this article can be accessed here: <http://dx.doi.org/10.1080/17437199.2013.840953>

References

- Apodaca, T. R., & Longabaugh, R. (2009). Mechanisms of change in motivational interviewing: A review and preliminary evaluation of the evidence. *Addiction, 104*, 705–715. doi:10.1111/j.1360-0443.2009.02527.x
- Armitage, C. J., Harris, P. R., & Arden, M. A. (2011). Evidence that self-affirmation reduces alcohol consumption: Randomized exploratory trial with a new, brief means of self-affirming. *Health Psychology, 30*, 633–641. doi:10.1037/a0023738
- Armitage, C. J., Harris, P. R., Hepton, G., & Napper, L. (2008). Efficacy of a brief intervention to increase acceptance of health risk information among adult smokers with low socioeconomic status. *The Psychology of Addictive Behaviors, 22*(1), 88–95. doi:10.1037/0893-164X.22.1.88
- Aronson, E. (1968). Dissonance theory: Progress and problems. In R. P. Abelson, E. Aronson, W. J. McGuire, T. M. Newcomb, M. J. Rosen-berg, & P. H. Tannenbaum (Eds.), *Theories of cognitive consistency: A sourcebook* (pp. 5–27). Skokie, IL: Rand McNally.
- Aronson, J., Blanton, H., & Cooper, J. (1995). From dissonance to disidentification: Selectivity in the self-affirmation process. *Journal of Personality and Social Psychology, 68*, 986–996. doi:10.1037/0022-3514.68.6.986
- Aronson, J., Cohen, G. L., & Nail, P. R. (1999). Self-affirmation theory: An update and appraisal. In E. H. Jones & J. Mills (Eds.), *Cognitive dissonance theory: Progress on a pivotal theory in social psychology* (pp. 127–147). Washington, DC: American Psychological Association Books.

- Bensley, L. S., & Wu, R. (2006). The role of psychological reactance in drinking following alcohol prevention messages. *Journal of Applied Psychology, 21*, 1111–1124.
- Bien, T. H., Miller, W. R., & Tonigan, J. S. (1993). Brief interventions for alcohol problems: A review. *Addiction, 88*, 315–336. doi:10.1111/j.1360-0443.1993.tb00820.x
- Brady, K. T., & Sonne, S. C. (1999). The role of stress in alcohol use, alcoholism treatment, and relapse. *Alcohol Research and Health, 23*, 263–271.
- Burke, B. L., Arkowitz, H., & Menchola, M. (2003). The efficacy of motivational interviewing: A meta-analysis of controlled clinical trial. *Journal of Consulting and Clinical Psychology, 71*, 843–861. doi:10.1037/0022-006X.71.5.843
- Chamberlain, P., Patterson, G., Reid, J., Kavanagh, K., & Forgatch, M. (1984). Observation of client resistance. *Behavior Therapy, 15*, 144–155. doi:10.1016/S0005-7894(84)80016-7
- Cohen, G. L., Garcia, J., Apfel, N., & Master, A. (2006). Reducing the racial achievement gap: A social-psychological intervention. *Science, 313*, 1307–1310. doi:10.1126/science.1128317
- Cohen, G. L., & Sherman, D. K. (in press). The psychology of change: Self-affirmation and social psychological intervention. *Annual Review of Psychology*.
- Cooper, J. (2007). *Cognitive dissonance: Fifty years of a classic theory*. Thousand Oaks, CA: Sage.
- Correll, J., Spencer, S. J., & Zanna, M. P. (2004). An affirmed self and an open mind: Self-affirmation and sensitivity to argument strength. *Journal of Experimental Social Psychology, 40*, 350–356. doi:10.1016/j.jesp.2003.07.001
- Creswell, J. D., Lam, S., Stanton, A. L., Taylor, S. E., Bower, J. E., & Sherman, D. K. (2007). Does self-affirmation, cognitive processing, or discovery of meaning explain cancer-related health benefits of expressive writing? *Personality and Social Psychology Bulletin, 33*, 238–250. doi:10.1177/0146167206294412
- Creswell, J. D., Welch, W. T., Taylor, S. E., Sherman, D. K., Gruenewald, T. L., & Mann, T. (2005). Affirmation of personal values buffers neuroendocrine and psychological stress responses. *Psychological Science, 16*, 846–851. doi:10.1111/j.1467-9280.2005.01624.x
- Crocker, J., Niiya, Y., & Mischkowski, D. (2008). Why does writing about important values reduce defensiveness?: Self-affirmation and the role of positive other-directed feelings. *Psychological Science, 19*, 740–747.
- DiClemente, C. C., & Prochaska, J. O. (1998). Toward a comprehensive, transtheoretical model of change: Stages of change and addictive behaviors. In W. R. Miller & N. Heather (Eds.), *Treating addictive behaviors* (2nd ed., pp. 3–24). New York, NY: Plenum Press.
- DiClemente, C. C., Marinilli, A. S., Singh, M., & Bellino, L. E. (2001). The role of feedback in the process of health behavior change. *American Journal of Health Behavior, 25*, 217–227. doi:10.5993/AJHB.25.3.8
- Epton, T., & Harris, P. R. (2008). Self-affirmation promotes health behavior change. *Health Psychology, 27*, 746–752. doi:10.1037/0278-6133.27.6.746
- Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row, Peterson.
- Gilbert, D. T., Pinel, E. C., Wilson, T. D., Blumberg, S. J., & Wheatley, T. P. (1998). Immune neglect: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology, 75*, 617–638. doi:10.1037/0022-3514.75.3.617
- Gosling, P., Denizeau, M., & Oberlé, D. (2006). Denial of responsibility: A new mode of dissonance reduction. *Journal of Personality and Social Psychology, 90*, 722–733. doi:10.1037/0022-3514.90.5.722
- Griffin, D. W., & Harris, P. R. (2011). Calibrating the response to health warnings. *Psychological Science, 22*, 572–578.
- Harmon-Jones, E., & Mills, J. (1999). *Cognitive dissonance: Progress on a pivotal theory in social psychology*. Washington, DC: American Psychological Association.
- Harris, P. R., & Epton, T. (2009). The impact of self-affirmation on health cognition, health, behavior, and other-related responses: A narrative review. *Social and Personality Psychology Compass, 3*, 962–978. doi:10.1111/j.1751-9004.2009.00233.x
- Harris, P. R., & Epton, T. (2010). The impact of self-affirmation on health-related cognition and health behaviour: Issues and prospects self-affirmation and health: Issues and prospects. *Social and Personality Psychology Compass, 4*, 439–454. doi:10.1111/j.1751-9004.2010.00270.x

- Harris, P. R., Mayle, K., Mabbott, L., & Napper, L. (2007). Self-affirmation reduces smokers' defensiveness to graphic on-pack cigarette warning labels. *Health Psychology, 26*, 437–446. doi:10.1037/0278-6133.26.4.437
- Harris, P. R., & Napper, L. (2005). Self-affirmation and the biased processing of health-risk information. *Personality and Social Psychology Bulletin, 31*, 1250–1263. doi:10.1177/0146167205274694
- Jessop, D. C., Simmonds, L. V., & Sparks, P. (2009). Motivational and behavioural consequences of self-affirmation interventions: A study of sunscreen use among women. *Psychology and Health, 24*, 529–544. doi:10.1080/08870440801930320
- Jessop, D. C., Simmonds, L. V., & Sparks, P. (2009). Motivational and behavioural consequences of self-affirmation interventions: A study of sunscreen use among women. *Psychology and Health, 24*, 529–544. doi:10.1080/08870440801930320
- Klein, W. M. P., Blier, H. K., & Janze, A. M. (2001). Maintaining positive self-evaluations: Reducing attention to diagnostic but unfavorable social comparison information when general self-regard is salient. *Motivation and Emotion, 25*(1), 23–40. doi:10.1023/A:1010607821908
- Klein, W. M. P., & Harris, P. R. (2009). Self-affirmation enhances attentional bias toward threatening components of a persuasive message. *Psychological Science, 20*, 1463–1467. doi:10.1111/j.1467-9280.2009.02467.x
- Klein, W. M. P., Harris, P. R., Ferrer, R. A., & Zajac, L. E. (2011). Feelings of vulnerability in response to threatening messages: Effects of self-affirmation. *Journal of Experimental Social Psychology, 47*, 1237–1242. doi:10.1016/j.jesp.2011.05.005
- Knowles, E. S., & Linn, J. A. (2004). The importance of resistance to persuasion. In E. S. Knowles & J. A. Linn (Eds.), *Resistance and persuasion* (pp. 3–11). Mahwah, NJ: Lawrence Erlbaum.
- Kunda, Z. (1987). Motivated inference: Self-serving generation and evaluation of causal theories. *Journal of Personality and Social Psychology, 53*, 636–647. doi:10.1037/0022-3514.53.4.636
- Leffingwell, T. R., Neumann, C. A., Babitzke, A. C., Leedy, M. J., & Walters, S. T. (2007). Social psychological approaches and motivational interviewing: A review of relevant principles and recommendations for research and practice. *Behavioural and Cognitive Psychotherapy, 35*, 31–45. doi:10.1017/S1352465806003067
- Littell, J. H., & Girvin, H. (2002). Stages of change: A critique. *Behavior Modification, 26*, 223–273. doi:10.1177/0145445502026002006
- Logel, C., & Cohen, G. L. (2012). The role of self in physical health: Testing the effect of a values-affirmation intervention on weight loss. *Psychological Science, 23*(1), 53–55. doi:10.1177/0956797611421936
- Lundahl, B., & Burke, B. L. (2009). The effectiveness and applicability of motivational interviewing: A practice-friendly review of four meta-analyses. *Journal of Clinical Psychology, 65*, 1232–1245. doi:10.1002/jclp.20638
- Mancuso, C. A., Choi, T. N., Westermann, H., Wenderoth, S., Hollenberg, J. P., Wells, M. T., ... Charlson, M. E. (2012). Increasing physical activity in patients with asthma through positive affect and self-affirmation. *Archives of Internal Medicine, 172*, 337–343. doi:10.1001/archinternmed.2011.1316
- Mantle, M., & Lieber, J. (1994). Time in a bottle. *Sports Illustrated Vault*. Retrieved from <http://sportsillustrated.cnn.com/vault/article/magazine/MAG1005099/index.htm>
- Marlatt, G. A., & Witkiewitz, K. (2002). Harm reduction approaches to alcohol use: Health promotion, prevention, and treatment. *Addictive Behaviors, 27*, 867–886. doi:10.1016/S0306-4603(02)00294-0
- Martins, R. K., & McNeil, D. W. (2009). Review of motivational interviewing in promoting health behaviors. *Clinical Psychology Review, 29*, 283–293. doi:10.1016/j.cpr.2009.02.001
- Matz, D. C., & Wood, W. (2005). Cognitive dissonance in groups: The consequences of disagreement. *Journal of Personality and Social Psychology, 88*, 22–37. doi:10.1037/0022-3514.88.1.22
- McQueen, A., & Klein, W. M. P. (2006). Experimental manipulations of self-affirmation: A systematic review. *Self and Identity, 5*, 289–354. doi:10.1080/15298860600805325
- Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change* (2nd ed.). New York, NY: Guilford Press.
- Miller, W. R., & Rose, G. S. (2009). Toward a theory of motivational interviewing. *American Psychologist, 64*, 527–537. doi:10.1037/a0016830

- Miller, W. R., Benefield, R. G., & Tonigan, J. S. (1993). Enhancing motivation for change in problem drinking: A controlled comparison of two therapist styles. *Journal of Consulting and Clinical Psychology, 61*, 455–461. doi:10.1037/0022-006X.61.3.455
- Muraven, M., Collins, R.L., & Neuhaus, K. (2002). Self-control and alcohol restraint: An initial application of the Self-Control Strength Model. *Psychology of Addictive Behaviors, 16*, 113–120. doi:10.1037/0893-164X.16.2.113
- Napper, L., Harris, P. R., & Epton, T. (2009). Developing and testing a self-affirmation manipulation. *Self and Identity, 8*, 45–62. doi:10.1080/15298860802079786
- Napper, L., Harris, P. R., & Klein, W. M. P. (in press). Combining self-affirmation with the extended parallel process model: The consequences for motivation to eat more fruits and vegetables. *Health Communication*.
- Norwinski, J., Baker, S., & Carroll, K. M. (1992). *Twelve step facilitation therapy manual: A Clinical research guide for therapists treating individuals with alcohol abuse and dependence* (Vol. 1). Rockville, MD: US Dept. of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Alcohol Abuse and Alcoholism.
- Ogedegbe, G. O., Boutin-Foster, C., Wells, M. T., Allegrante, J. P., Isen, A. M., Jobe, J. B., & Charlson, M. E. (2012). A randomized controlled trial of positive-affect intervention and medication adherence in hypertensive African Americans. *Archives of Internal Medicine, 172*, 322–326. doi:10.1001/archinternmed.2011.1307
- Patterson, G. R., Chamberlain, P., & Reid, J. B. (1982). A comparative evaluation of a parent-training program. *Behavior Therapy, 13*, 638–650. doi:10.1016/S0005-7894(82)80021-X
- Peterson, J. C., Charlson, M. E., Hoffman, Z., Wells, M. T., Wong, S., Hollenberg, J. P., ... Allegrante, J. P. (2012). A randomized controlled trial of positive-affect induction to promote physical activity after percutaneous coronary intervention. *Archives of Internal Medicine, 172*, 329–336. doi:10.1001/archinternmed.2011.1311
- Prochaska, J. O., & DiClemente, C. C. (1984). *The transtheoretical approach: Crossing the traditional boundaries of therapy*. Malabar, FL: Frierger.
- Project MATCH Research Group. (1997). Matching alcoholism treatments to client heterogeneity: Project MATCH posttreatment drinking outcomes. *Journal of Studies on Alcohol, 58*, 7–29.
- Reed, M. B., & Aspinwall, L. G. (1998). Self-affirmation reduces biased processing of health-risk information. *Motivation and Emotion, 22*(2), 99–132. doi:10.1023/A:1021463221281
- Rokeach, M. (1973). *The nature of human values*. New York, NY: Free press.
- Schüz, N., Schüz, B., & Eid, M. (in press). When risk communication backfires: Randomized controlled trial on self-affirmation and reactance to personalized risk feedback in high-risk individuals. *Health Psychology*.
- Sciacca, K. (2009). *Motivational interviewing – MI, glossary & fact sheet*. Retrieved from <http://www.motivationalinterviewing.org/sites/default/files/miglossary.pdf>
- Scott, J. L., Brown, A. C., Phair, J. K., Westland, J. N., & Schüz, B. (2013). Self-affirmation, intentions, and alcohol consumption in students: A randomized exploratory trial. *Alcohol and Alcoholism*. Advance online publication.
- Sheeran, P., Harris, P. R., & Epton, T. (2013). Does heightening risk appraisals change people's intentions and behavior? A meta-analysis of experimental studies. *Psychological Bulletin*. Advance online publication.
- Sherman, D. K., Bunyan, D. P., Creswell, J. D., & Jaremka, L. M. (2009). Psychological vulnerability and stress: The effects of self-affirmation on sympathetic nervous system responses to naturalistic stressors. *Health Psychology, 28*, 554–562. doi:10.1037/a0014663
- Sherman, D. K., & Cohen, G. L. (2006). The psychology of self-defense: Self-affirmation theory. *Advances in Experimental Social Psychology, 38*, 183–242. doi:10.1016/S0065-2601(06)38004-5.
- Sherman, D. K., Cohen, G. L., Nelson, L. D., Nussbaum, A. D., Bunyan, D. P., & Garcia, J. (2009). Affirmed yet unaware: Exploring the role of awareness in the process of self-affirmation. *Journal of Personality and Social Psychology, 97*, 745–764. doi:10.1037/a0015451
- Sherman, D. K., & Hartson, K. A. (2011). Reconciling self-defense with self-criticism: Self-affirmation theory. In M. D. Alicke & C. Sedikides (Eds.), *Handbook of self-enhancement and self-protection* (pp. 128–154). New York, NY: Guilford Press.

- Sherman, D. K., Hartson, K. A., Binning, K. R., Purdie-Vaughns, V., Garcia, J., Taborsky-Barba, S., ... Cohen, G. L. (2013). Deflecting the trajectory and changing the narrative: How self-affirmation affects academic performance and motivation under identity threat. *Journal of Personality and Social Psychology*, *104*, 591–618. doi:10.1037/a0031495
- Sherman, D. K., Nelson, L. D., & Steele, C. M. (2000). Do messages about health risks threaten the self? Increasing the acceptance of threatening health messages via self-affirmation. *Personality and Social Psychology Bulletin*, *26*, 1046–1058. doi:10.1177/01461672002611003
- Silverman, A., Logel, C., & Cohen, G. L. (2013). Self-affirmation as a deliberate coping strategy: The moderating role of choice. *Journal of Experimental Social Psychology*, *49*, 93–98. doi:10.1016/j.jesp.2012.08.005
- Sivanathan, N., Molden, D. C., Galinsky, A. D., & Ku, G. (2008). The promise and peril of self-affirmation in de-escalation of commitment. *Organizational Behavior and Human Decision Processes*, *107*, 1–14. doi:10.1016/j.obhdp.2007.12.004
- Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 261–302). New York, NY: Academic Press.
- Steele, C. M., & Liu, T. J. (1983). Dissonance processes as self-affirmation. *Journal of Personality and Social Psychology*, *45*, 5–19. doi:10.1037/0022-3514.45.1.5
- Wakslak, C. J., & Trope, Y. (2009). Cognitive consequences of affirming the self: The relationship between self-affirmation and object construal. *Journal of Experimental Social Psychology*, *45*, 927–932. doi:10.1016/j.jesp.2009.05.002
- Weinstein, N. D. (1988). The precaution adoption process. *Health Psychology*, *7*, 355–386. doi:10.1037/0278-6133.7.4.355
- Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They're not magic. *Review of Educational Research*, *81*, 267–301. doi:10.3102/0034654311405999
- van Koningsbruggen, G. M. (2009). Processing and acceptance of threatening health information (Unpublished PhD thesis). Free University of Amsterdam, Amsterdam.
- van Koningsbruggen, G. M., & Das, E. (2009). Don't derogate this message! Self-affirmation promotes online type 2 diabetes risk test taking. *Psychology and Health*, *24*, 635–649.
- van Koningsbruggen, G. M., Das, E., & Roskos-Ewoldsen, D. R. (2009). How self-affirmation reduces defensive processing of threatening health information: Evidence at the implicit level. *Health Psychology*, *28*, 563–568. doi:10.1037/a0015610
- Zhao, X., Peterson, E. B., Kim, W., & Rolfe-Redding, J. (2012). Effects of self-affirmation on daily versus occasional smokers' responses to graphic warning labels. *Communications Research*. Advance online publication.