The autobiography of addiction: Autobiographical reasoning and psychological adjustment in abstinent alcoholics

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The narration of drinking experiences plays a central role in many alcohol rehabilitation programmes, yet few researchers have considered whether alcoholics' stories about such experiences relate to their psychological adjustment. Here we examine the extent to which drinking stories of abstinent alcoholics reflect autobiographical reasoning processes denoting self-change and self-stability, and whether these processes are associated with adjustment. Participants who revealed a positive self-change in their narratives about drinking demonstrated higher levels of self-esteem, authentic pride, and mental health compared to those who did not. In contrast, those who implied a sense of self-stability in their narratives demonstrated higher levels of hubristic pride and aggression, and poorer mental health. These results suggest that narrating positive self-change in the wake of substance abuse may underlie psychological adjustment, whereas establishing self-stability in these experiences may impede adjustment. More broadly, these findings underscore the importance of recognising the multi-dimensional nature of autobiographical reasoning.

Keywords: Autobiographical reasoning; Self-event connections; Alcohol addiction; Psychological adjustment.

For a moment I was alarmed, and called my friend, the doctor, to ask if I were still sane. He listened in wonder as I talked. Finally, he shook his head saying, "Something has happened to you I don't understand. But you had better hang on to it. Anything is better than the way you were."

Bill Wilson

"Bill's Story" is an autobiographical recount of Bill Wilson featured prominently in the official book of Alcoholics Anonymous (AA: Alcoholics Anonymous World Services [AAWS], 2001), the world's largest self-organised support network. In this story AA's co-founder Wilson is depicted as a man seemingly doomed to a life of addiction. However, as a result of the events he experiences during his darkest hour, Wilson is described as undergoing a drastic and positive characterological change, alluded to in the excerpt above. With this personality change come an increased commitment to sobriety and a renewal in Wilson's belief in the value of life.

By linking his sense of self to his personal experiences with addiction Wilson took steps towards developing a meaningful and coherent account of his past. Although Wilson was probably unaware of it, psychologists have long viewed such narrative efforts as beneficial (e.g., King, Scollon, Ramsey, & William, 2000). More recently, however, some have questioned whether developing a meaningful and coherent account of the past is in fact always adaptive (e.g., Lyubomirsky, Sousa, & Dickerhoof, 2006). Citing negative associations between efforts to understand personal experiences and psychological adjustment (e.g., McLean, Breen, & Fournier, 2010), researchers working in this more recent vein have sought to identify the personal, social, and cultural factors that attenuate the positive association between making sense of the past and psychological adjustment (e.g., McLean & Mansfield, 2010).

Here we build on this more recent research trend, by proposing that ambiguities regarding the costs and benefits of finding meaning in the past can be further reduced through recognition of the multi-dimensionality of autobiographical reasoning—one major constituent of the sense-making enterprise. Boiled down to its core, autobiographical reasoning entails two distinct dimensions – one based on establishing personal change across experiences, and the other on founding a sense of self-stability (Chandler, Lalonde, Sokol, & Hallett, 2003; McLean & Pasupathi, 2011). To demonstrate the importance of treating these forms of reasoning as distinct, we examined associations between self-change reasoning, self-stability reasoning, and psychological adjustment, in a sample of abstinent alcoholics active within AA. We chose to examine the autobiographical reasoning processes of a group of active AA members because of the emphasis placed on stories and storytelling in this support network, and the inherent assumption that meaning making, in this context, is an important contributor toward successful abstinence and consequent adjustment (Denzin, 2009; O'Reilly, 1997).

THE NATURE OF AUTOBIOGRAPHICAL REASONING

What is the function of autobiographical reasoning?

Autobiographical reasoning, which is present when conceptions of the self are connected to personal experiences (Habermas & Bluck, 2000; McLean & Mansfield, 2010), is typically used to develop and secure a sense of personal persistence (i.e., self-continuity; Bluck & Alea, 2008; Chandler et al., 2003; Pasupathi, Mansour, & Brubaker, 2007). Personal persistence, in turn, is predicated on the maintenance of two conflicting autobiographical reasoning processes: one based on self-change, and the other on self-stability (Chandler et al., 2003). The first process, which involves acknowledging and understanding the tremendous amount of change one has undergone throughout his or her life, is necessary to avoid becoming overwhelmed with feelings of personal stagnation. The second process, establishing a stable sense of self across time and context, is necessary to avoid becoming disconnected from one's personal history and possible future. Both processes are thought to be important, because failing to establish a sense of personal persistence can result in feelings of futility and isolation, thereby increasing the likelihood of engaging in self-injurious behaviours (such as suicide; Ball & Chandler, 1989).

The relation between autobiographical reasoning and personal persistence is mediated by the construction of a coherent life story (Pasupathi et al., 2007). A coherent story allows for the mitigation of discrepancies and inconsistencies among temporally distinct self-concepts, and leads individuals to feel that ''despite the many changes that attend the passage of time, the self of the past led up to or set the stage for the self of the present, which in turn will lead up to or set the stage for the self of the future'' (McAdams, 1995, p. 382). To foster this perception, however, the procession of personal events that comprise the life story must be associated with the progression of temporally distinct self-concepts (Habermas & Bluck, 2000). Autobiographical reasoning is needed to draw a coherent connection between these discrete constructs. Thus, autobiographical reasoning represents the lifeblood of a coherent life story.

All of the above is not meant to suggest that autobiographical reasoning is essential when thinking about one's past. In her review of autobiographical reflection Staudinger (2001) drew an important distinction between *reminiscence* and *life review*. Both refer to the recollection of a life event, but in the case of the latter individuals move beyond mere recall to imbue the past experience with explanation (i.e., the provision of theories regarding why a given action took

place) and evaluation (of one's own and others' actions). Autobiographical reasoning is most appropriately understood as a function of life review rather than reminiscence per se.

How can autobiographical reasoning be identified?

Narrative psychologists have used the term "autobiographical reasoning" to refer to a host of processes including (but not limited to): reporting an insight or lesson learned from a previous experience, exuding wisdom when reflecting upon one's life, proffering a redemptive twist when describing personal hardships, and describing a stable personal characteristic within a self-narrative (see Bluck & Glück, 2004; McAdams, Reynolds, Lewis, Patten, & Bowman, 2001; McLean & Mansfield, 2010; Pasupathi et al., 2007). These processes can largely be organised in terms of those that reflect a sense of change versus those that reflect a sense of stability.

The lion's share of research on autobiographical reasoning has focused on processes of change, as opposed to stability (McLean & Pasupathi, 2011). As a result there has been a great deal of variability in the operationalisation of change-based reasoning processes. Some investigators have focused on internal (i.e., self-concept) transformations, others on external (i.e., social) transformations, and others still on both kinds of transformations. In the current project our consideration of change-based reasoning processes is restricted to those that entail a transformation in the self-concept (i.e., internal change).

Researchers who have studied reasoning processes connoting a sense of self-change have typically emphasised "causal self–event connections" (Pasupathi et al., 2007). Such connections are present when the narrator describes an event as *causing* a change in his or her personality. This form of reasoning is evident in the excerpt from "Bill's Story" provided above; in particular, in Wilson's suggestion that a series of events led to his spiritual transformation. In contrast, autobiographical reasoning processes entailing a sense of stability have most often been explored through a consideration of "illustrative self-event connections" (Pasupathi et al., 2007), which are present when the narrator refers to a stable personal attribute and then *illustrates* an example in which this attribute contributed to an event transpiring.

"Bill's Story" also houses instances of this type of reasoning. As an example, Wilson implicates his "fierce determinism" (AAWS, 2001, p. 4) as a principal cause behind the early professional successes he attained while drinking heavily.

Narrations of self-change and self-stability are further nuanced by variations in emotional valence (i.e., positivity/negativity), a potentially "important puzzle piece" (McLean & Pasupathi, 2011, p. 138) for understanding the relation between autobiographical reasoning and adjustment. With respect to self-change reasoning, the narrator may describe a given event as leading to an improvement in his or her personality (i.e., a positive change), or contributing to some sort of characterological regression (i.e., a negative change). With respect to self-stability reasoning, the narrator may denote stability by describing a positive or negative personal attribute. The importance of valence in change-based reasoning processes has received a good deal of research attention (e.g., McAdams et al., 2001), but only recently have researchers begun to examine issues of valence in stability-based reasoning (e.g., McLean & Pasupathi, 2011).

Is autobiographical reasoning adaptive?

Autobiographical reasoning can be used to attain a sense of personal persistence—the absence of which is associated with a slew of negative consequences (Ball & Chandler, 1989; Chandler et al., 2003). For this reason an absolute lack of autobiographical reasoning in one's life story is likely maladaptive. However, when we consider the different kinds of autobiographical reasoning, this assumption becomes overly simplistic.

Most researchers examining this issue have equated the term "adaptive" with psychological adjustment, which includes favourable evaluations of the self, positive emotional functioning, and heightened physical and mental health (e.g., Brissette, Scheier, & Carver, 2002). For some time researchers had almost invariably reported a positive relation between reasoning processes and psychological adjustment (e.g., King et al., 2000). These results were based primarily on studies of adults' narratives depicting positive self-change in the context of personal hardships or traumas (i.e., "redemption narratives"). However, as researchers widened the scope of inquiry

to include other types of experiences and age groups, evidence began to emerge suggesting that autobiographical reasoning was not always associated with positive outcomes (e.g., Fivush, Martin, Crawford, Reynolds, & Brewin, 2007). For example, McLean and colleagues (2010) reported a negative relation between narrative meaning making and psychological adjustment among young adolescent males. These findings have led to speculation about the potential personal, social, and cultural factors that may influence the relation between autobiographical reasoning and adjustment (e.g., McLean & Mansfield, 2010).

In sum, autobiographical reasoning is a complex and multifaceted process reflecting perceptions of positively and negatively valenced self-change and self-stability. Even setting aside the likely intervening effects of personal attributes, social contexts, and cultural constraints, it is inappropriate to make an all-or-none judgement of whether autobiographical reasoning is adaptive. It comprises two distinct constituents that are unlikely to correspond to adjustment in a uniform manner. To underscore the importance of conceiving of autobiographical reasoning in a multidimensional manner, we examined psychological adjustment in relation to change- and stability-based reasoning processes in a sample of abstinent alcoholics.

ALCOHOLISM AND NARRATIVE

Alcohol over-consumption is responsible for 5–6% of deaths occurring in North America and hundreds of billions of dollars spent annually within the national health care system (Rehm et al., 2009). Alcohol addiction thus poses a major national health problem, with no simple solution. Approximately 79% of alcoholics who attempt to recover outside a formalised programme relapse within the first year of sobriety (Moyer & Finley, 2002). For this reason alcoholics often enrol in formalised or informal programmes, in which telling the story of one's addiction and movement towards sobriety typically plays a central role. Despite the emphasis placed on personal narratives of addiction within these programmes, little research has examined the stories told by alcoholics.

In one of the few empirical attempts to consider alcoholics' stories, Singer (1997) examined the narratives of a group of men chronically addicted to alcohol (and, in some cases, other substances). Among other insights (such as an overwhelming absence of agency or communion in his participants' life narratives), Singer observed that these individuals' narratives lacked any evidence of a connection to the sober world. Singer believed that, without establishing such a connection, these addicts had only a slim chance of recovery.

One of the major ways in which alcoholics attempt to establish (or re-establish) a connection to the sober world is through enrolment in support groups such as AA. These groups vary in the degree to which personal stories are emphasised, with AA being perhaps the most story-focused. This is evident from the self-help book published and distributed by AA, which begins with ''Bill's Story'' and concludes with the personal narratives of an additional 42 successful programme members, and from the regularly held ''speaker meetings'' that provide a public forum for AA members to narrate their drinking stories while in the company of other alcoholics.

What are the guidelines for these stories? Small-scale qualitative examinations of AA have observed that the recital of positive self-change represents a salient theme (e.g., O'Reilly, 1997). Indeed, as was noted above, such redemptive imagery is on full display in ''Bill's Story'', where extraneous circumstances are described as changing Wilson's personality for the better. This focus on characterological improvement in the wake of addiction can be largely attributed to a belief in the benefits reaped from the endorsement of such a story (Denzin, 2009). A central tenet of AA is that the self-narrative formed around addiction and recovery can become self-fulfilling. Interpreted in this light, developing a personal narrative laced with characterological improvement may in fact promote a corresponding change in behaviour and gain in adjustment.

Consistent with the notion that personal narratives come to shape recovery trajectories, Dunlop and Tracy (2012) found that newly sober alcoholics who described their last drinking experience as causing a change in their personality that was conducive to sobriety (e.g., becoming stronger) were more likely to maintain their sobriety in the months following the production of these narratives, relative to those whose drinking stories did not evince a sense of redemption. In addition, although those who did and did not construct a redemptive narrative were indistinguishable initially (in terms of personality, emotions, and physical and mental health), over time

the redemptive group demonstrated improved health relative to the non-redemptive group.

The idea that narratives depicting positive self-change should predict psychological adjustment is common within the social sciences (e.g., McAdams et al., 2001); a number of psychological theories suggest that perceiving personological change in the wake of trying circumstances is adaptive (e.g., Tedeschi & Calhoun, 1996). However, this emphasis on processes of self-change belies the importance of self-stability in the recovery from addiction. Paradoxically, although AA encourages personal improvement and change, recovering addicts are also instructed to recognise their limitations, including the "fact" that they were, are, and always will be alcoholics (Brown, 1985; Denzin, 2009). Several researchers have proposed that the recognition of stable negative self-attributes can stimulate positive change (see Markus & Wurf, 1987), but others have argued that the endorsement of these attributes will continually sabotage efforts to build and maintain a heightened level of psychological adjustment (Beck, 1967). Thus it is unclear whether the acknowledgement of negative traits is as beneficial as change-based reasoning processes seem to be (Brown, 1985).

THE PRESENT STUDY

We examined whether the autobiographical reasoning processes of self-change and self-stability were associated with divergent psychological and mental health profiles. We explored these relations among a sample of abstinent alcoholic AA members, both to address the relative dearth of research on alcoholics' drinking stories, and to test whether certain elements of these stories were, in fact, associated with the adaptive correlates assumed by many rehabilitation programmes. Based on theorising and findings in this area (e.g., Dunlop & Tracy, 2012), we predicted that participants who professed positive self-change within the context of their drinking stories would evince a heightened level of psychological adjustment relative to those who did not make such a profession. In contrast, the heterogeneity of perspectives regarding self-stability and psychological adjustment precluded us from making any specific directional prediction concerning the relation between these constructs.

METHOD

Participants

A total of 46 members of AA (50% female; age range = 22–82 years, $M = 51$; 74% Caucasian, 13% First Nations, 13% Other) were recruited from AA meetings in the Vancouver area. The requirement for these individuals' participation was that they be AA members who were actively abstaining from alcohol (M length of sobriety = 127.5 months, range = 3–468.75). Three additional abstinent alcoholics were recruited for this study but not included in our analyses (for two of these alcoholics the transcript corresponding to one of the two narratives produced was not available for coding whereas the third alcoholic reported a sobriety length of zero months). We targeted AA members who had abstained for a significant period of time because we assumed that these individuals would have become indoctrinated with the key goals of the programme, yet not be coping on a day-to-day basis with the struggle to avoid drinking. By assessing the link between autobiographical reasoning and psychological adjustment among these individuals, we sought to examine whether autobiographical reasoning processes were associated with psychological adjustment in individuals who have likely dealt with major hardships yet are not currently in a state of crisis.

Procedure

Participants travelled to our laboratory at the University of British Columbia, and sat in a quiet room in front of a digital video camera. They were prompted to orally narrate two drinking-related experiences (the analysis of two or fewer personal stories is common within narrative psychology; Frimer, Walker, Dunlop, Lee, & Riches, 2011; Pals, 2006). First, participants were asked to reflect upon and describe "the last time they drank and felt badly about it". Second, they were asked to recall "the last time they wanted a drink but did not drink". Oral narratives were recorded and later transcribed verbatim. The mean length of these narratives was 357.24 words ($SD = 332.78$). To ensure that participants actually discussed drinking-related experiences, two independent coders read and coded each narrative. Both coders indicated that each of the 92 narratives examined was related to issues of addictive drinking or sobriety. Participants next

completed a questionnaire package which solicited demographic information (e.g., age, length of sobriety, and gender) and included measures assessing subjective evaluations of the self, several personality traits, and mental health. Participants received a $40.00 honorarium.

Measures

Personal narratives. We were interested in examining the relation between autobiographical reasoning in participants' narratives and psychological adjustment. To this end we assessed the presence/absence of each reasoning process across the two narratives obtained, rather than treating them as separate. Both narratives were about critical life events relevant to participants' addiction and sobriety, and by collapsing across them we were able to assess reasoning processes in a dispositional manner, rather than focusing on particular processes that might be present only within a given specific narrative. This is a common approach among researchers examining autobiographical narratives (e.g., McAdams et al., 2001). Supporting this approach, the prevalence of each reasoning process we examined (described in detail below) did not differ between the two types of narratives: $F(1, 45) = 1.60$, $p = .20$, for positive self-change; $F(1, 45) = 0.20$, $p = .66$, for positive self-stability; and $F(1, 45) = 0.60$, $p = .45$, for negative self-stability. In addition, these narratives did not differ in length, $F(1, 45) = 0.70$, $p = .41$.

Coding of narratives

A research assistant (who was blind to the study goals) coded participants' narratives for the presence/absence of autobiographical reasoning processes entailing self-change and self-stability. All narratives were coded for each reasoning process, such that codes were not mutually exclusive and a single narrative could be coded for the presence of multiple narrative themes. To establish inter-rater reliability, a second research assistant (also blind to study goals) coded exactly one quarter (i.e., 25%) of the sample. Examples of each of the coded categories described below are presented in Table 1.

Self-change autobiographical reasoning processes. To identify instances of self-change, narratives were coded for the presence/absence of causal self-event connections (Pasupathi et al., 2007). Coders looked for cases where participants described the event as stimulating a lasting change in their personality and/or character (83% agreement, $\kappa = .62$). We initially intended to identify professions of both positive *and* negative self-change, but the exceedingly low frequency of descriptions of negative self-change (i.e., no instances were identified during initial coding) precluded this possibility. As a result we coded for instances of self-change that were positive (but not negative) in valence. The dearth of negative self-change observed may be a function of the unique nature of this sample; for abstinent alcoholics who have been AA member for many years, and who wish to uphold the basic precepts of the AA recovery model, constructing a story in which one's recovery from addiction or prior drinking causes a *negative* personal change would run quite dramatically against the grain. Alternatively this may reflect a broader influence of Western culture, which has been argued to be largely redemptive in nature (McAdams, 2006b).

TABLE 1
Examples of autobiographical reasoning processes

Category	Exemplary narrative
Positive self-change	. . . I felt terrible about that drinking episode, and in fact that the um, was in the program we call it— the AA program what we call uh, "Bottoming Out", which I had done. So consequently, I felt terrible but um, <u>in retrospect that's what it took for me to actually fully um, fully engage in the program of Alcoholics Anonymous</u> . . .
Positive self-stability	. . . <u>I've got a lot of emotional armor . . .</u> it is part of my practice today . . . I haven't had a lot of experience dealing with the craving because generally either it's removed from me, I haven't had a lot of times where I struggled . . .
Negative self-stability	. . . so I'm used to having a drink here and a cigarette there and because, you know, <u>I'm a nervous guy, shy</u> and so, I was real nervous, I just sat there the whole night . . .

Underlined material indicates the portion of the narrative that led to the coding decision.

Self-stability autobiographical reasoning processes. To identify instances of self-stability each narrative was coded for the presence/absence of illustrative self-event connections (Pasupathi et al., 2007). As Pasupathi and colleagues proposed, an illustrative self-event connection is made when one proffers a stable personal attribute in the interest of explaining why the narrated event occurred. Building on the work of McLean and Pasupathi (2011), we coded instances of self-stability with sensitivity to the valence of the self-professed attribute. Thus positive self-stability consisted of the profession of a positive personal attribute, such as a socially desirable personality characteristic or an ability to control one's alcohol consumption (e.g., being creative, never craving a drink), whereas negative self-stability consisted of the profession of a negative personal attribute, such as an undesirable personality characteristic or an inability to control one's alcohol consumption (e.g., being "insane", craving alcohol when drinking; 87% agreement, $\kappa = .70$).

Psychological adjustment

Like autobiographical reasoning, psychological adjustment is multidimensional in nature (e.g., Brissette et al., 2002). To account for this multidimensionality we assessed psychological adjustment in terms of (a) subjective evaluations of the self (i.e., self-esteem), (b) emotional dispositions associated with adaptive/maladaptive tendencies (i.e., authentic pride, hubristic pride, and aggression), and (c) mental health.

Subjective evaluations of the self. We assessed subjective evaluations of the self with the four-item version of the Rosenberg (1965) Self-Esteem scale ($\alpha = .75$), which quantifies feelings of self-worth. Participants were asked to rate the degree to which they agreed with statements such as "On the whole, I am satisfied with myself" and "I take a positive attitude toward myself". Responses were recorded on a 5-point Likert type scale ranging from "strongly disagree" to "strongly agree".

Emotional dispositions. We assessed emotional dispositions associated with adaptive/maladaptive outcomes by measuring dispositional pride and aggression. Recent research has identified two facets of pride (Tracy, Cheng, Robins, & Trzesniewski, 2009; Tracy & Robins, 2007). One of these facets, authentic pride, has been found to be largely beneficial, coinciding with factors such as genuine self-esteem, agreeableness, and conscientiousness, empathic concern for others, and a low propensity towards depression, trait anxiety, and social phobias. In contrast the other facet, hubristic pride, is largely maladaptive, coinciding with factors such as narcissism (particularly in its more vulnerable and pathological forms) shame, anxiety, social phobias, dissociative disorders, and low empathy and even prejudicial attitudes towards out-group members (Ashton-James & Tracy, 2012; Tracy et al., 2009; Tracy, Cheng, Martens, & Robins, 2011). Trait authentic ($\alpha = .90$) and hubristic ($\alpha = .85$) pride were assessed using the 14-item trait authentic and hubristic pride scale (Tracy & Robins, 2007), in which participants rate the extent to which they generally feel each of a series of emotion items associated with authentic (e.g., accomplished, productive) and hubristic (e.g., arrogant, snobbish) pride, on a 5-point Likert-type scale ranging from "not at all" to "extremely".

The tendency to behave aggressively has many problematic correlates, such as impulsiveness (Buss & Perry, 1992) and domestic abuse (Maiuro, Cahn, Vitaliano, Wagner, & Zegree, 1988). In addition, aggression has been found to correspond positively with several indices of poor health including heart disease and hypertension (Johnson, 1990). More focal to current concerns, aggression and alcohol addiction tend to be positively related (e.g., Miczek et al., 1994). We assessed trait aggression using Buss and Perry's (1992) aggression questionnaire. This measure (which contains 29 items) taps aggressiveness along four dimensions (physical aggression, verbal aggression, anger, and hostility). Exemplary items include "If I have to resort to violence to protect my rights, I will" and "I can't help getting into arguments when people disagree with me". Participants rated these items on a 5-point Likert type scale ranging from "extremely uncharacteristic of me" to "extremely characteristic of me". Four inventory items (one from each dimension of aggression) were accidentally omitted from the questionnaire packages administered to participants: "I get into fights a little more than the average person" (physical aggression), "My friends say that I'm somewhat argumentative" (verbal aggression), "Sometimes I fly off the handle for no reason" (anger), and "I know that

'friends' talk about me behind my back'' (hostility). However, given the high level of internal consistency found here ($\alpha = .83$), these omissions are unlikely to change the reliability (or validity) of the scale employed in any meaningful way.

Mental health. We measured mental health with the 53-item Brief Symptom Inventory (BSI; Derogatis, 1975). The BSI assesses mental distress along nine symptom dimensions (somatisation, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism), and has been identified as an effective tool for screening psychological disorders (Endermann, 2005). Participants were asked to rate the extent to which they felt distressed over the last week as a result of a series of activities, such as ''trouble falling asleep'' and ''feelings of worthlessness''. Items were rated on a 5-point Likert-type scale ranging from ''not at all'' to ''extremely''. The BSI Global Severity Index (a more reliable indicator of psychological distress than each of the nine separate symptom-level dimensions; Boulet & Boss, 1991) was subsequently derived. This scale was reverse-scored such that higher values were indicative of greater health ($\alpha = .89$).

RESULTS

Preliminary analyses

Prior to examining associations between autobiographical reasoning and psychological adjustment we considered the correlations between demographic variables (age, months of sobriety, and gender) and our focal constructs. We also considered the intercorrelations among the various autobiographical reasoning processes assessed.

Demographic variables and psychological adjustment. Age correlated positively with self-esteem, $r = .46$, $p = .001$, authentic pride, $r = .30$, $p = .04$, and general health, $r = .39$, $p = .009$, and negatively with aggression, $r = -.37$, $p = .01$. Length of sobriety also correlated positively with self-esteem, $r = .36$, $p = .015$, authentic pride, $r = .31$, $p = .04$, and general health, $r = .35$, $p = .02$, and negatively with aggression, $r = -.44$, $p = .003$. This is not surprising given that age and length of sobriety were themselves highly correlated, $r = .76$, $p < .001$. Relying on a point-biserial

correlation coefficient (which is used when examining the association between nominal and continuous variables), we found that gender related to aggression to a marginally significant degree, $r_{pb} = -.28$, $p = .065$, such that men tended to report higher levels of aggression than women (in our dataset, males were denoted with a value of "1" and female were denoted with a value of "2"). No other significant relations emerged between demographic variables and measures of adjustment, rs $\leq \pm.20$, r_{pb}s $\leq \pm.23$, ps $\geq .13$.

Demographic variables and autobiographical reasoning. Once again relying on point-biserial correlation coefficients, age and sobriety length were found to relate positively to the presence of the profession of positive self-change in participants' narratives ($r_{pb} = .42$, for age, and, $r_{pb} = .36$, for sobriety length both ps $< .015$). In contrast, neither age nor length of sobriety significantly predicted the exhibition of self-stability, r_{pb}s $\leq \pm.17$, ps $\geq .26$. Calculating a series of phi correlation coefficients (which are used when examining relations between dichotomous variables), gender was not significantly related to either the profession of self-change or self-stability, φs $\leq \pm.22$, ps $\geq .15$.

Interrelations among autobiographical reasoning processes. Examining the interrelations among autobiographical reasoning processes, again using phi correlation coefficients, we found that the tendency to describe positive self-change when narrating one's experiences with alcohol was not significantly related to the display of positive self-stability, $\varphi = -.22$, $p = .15$, but was moderately negatively related to the display of negative self-stability, $\varphi = -.36$, $p = .014$—this relation makes sense, given that these two processes are in many ways antagonistic to each other. Finally we did not observe a significant relation between positive and negative self-stability, $\varphi = .22$, $p = .15$. As a result we concluded that, although the narrative elements coded were not entirely orthogonal, they were clearly distinct from one another, and for this reason were examined separately in subsequent analyses.
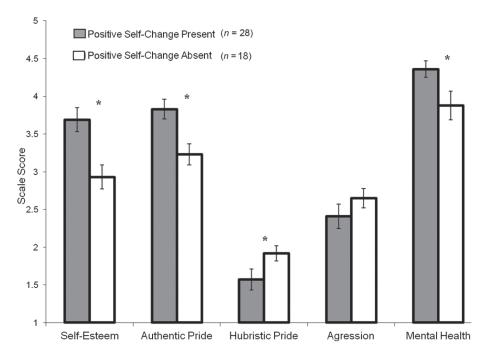
Main analyses

Before considering mean-level differences in adjustment between those who did and did not exhibit specific forms of autobiographical reasoning, we first tested for interactions between

(a) the autobiographical reasoning processes that were correlated with one another (i.e., positive self-change and negative self-stability) and (b) length of sobriety and the autobiographical reasoning process with which it correlated (i.e., positive self-change). We dummy-coded autobiographical reasoning processes ("1" = present, "−1" = absent), and centred length of sobriety, then conducted a multi-step regression analysis in which scores on the given adjustment variable were regressed onto the two applicable predictor variables in the first step, and variance in the dependent variable that had not been accounted for by these predictors was regressed onto their interactive term in the second step. If the interaction term accounted for a significant portion of this remaining variability, then the given predictors would be understood to interact meaningfully. If the given variables did not interact, however, then the interaction term was not considered when examining the correspondence between autobiographical reasoning and adjustment.

In our main analyses we compared differences between individuals who did and did not produce an instance of positive self-change, positive self-stability, and negative self-stability in their narratives by conducting an analysis of variance (ANOVA) with presence/absence of the given autobiographical reasoning process serving as the predictor variable and the applicable measure of adjustment serving as the dependent variable. Thus, for each dependent variable, three ANOVAs were run (with each analysis contrasting the mean-level of the dependent variable between participants who did and did not exhibit the applicable form of autobiographical reasoning). In cases where a significant effect was noted, analyses were followed by examining (via analysis of covariance; ANCOVA) whether the given autobiographical reasoning process remained predictive of adjustment after taking into account participants' length of sobriety (which correlated with all adjustment variables, save for hubristic pride). In these follow-up analyses adjustment, autobiographical reasoning, and length of sobriety served as the predicted variable, predictor variable, and covariate, respectively.

We chose to consider length of sobriety, rather than age, in these analyses because sobriety is more theoretically relevant to psychological adjustment in this context (Brown, 1985), and we could examine only one or the other variable because their very high intercorrelation in this data set made them essentially redundant.

Autobiographical reasoning and evaluations of the self. No significant interactions emerged between positive self-change and negative self-stability, $\beta = -.12$, $p = .42$, nor between sobriety length and positive self-change, $\beta = -.11$, $p = .52$, in predicting self-esteem, once the mean-levels of the applicable variables had been controlled for. As predicted, participants who described positive self-change in their stories reported higher self-esteem than those who did not, $F(1, 43) = 10.03$, $p = .003$, $\eta_p^2 = .19$ (see Figures 1, 2, and 3 for summary profiles of results for participants who did, and did not, exhibit positive self-change, positive self-stability, and negative self-stability in their stories, respectively), and this relation remained significant after controlling for sobriety length, $F(1, 42) = 5.53$, $p = .023$, $\eta_p^2 = .12$. In contrast, participants who produced an instance of positive self-stability in their narratives exhibited a marginally lower level of self-esteem relative to those who did not, $F(1, 44) = 2.98$, $p = .09$. Finally, no difference in self-esteem was observed between those who did and did not exhibit an instance of negative self-stability, $F(1, 44) = 1.54$, $p = .22$.
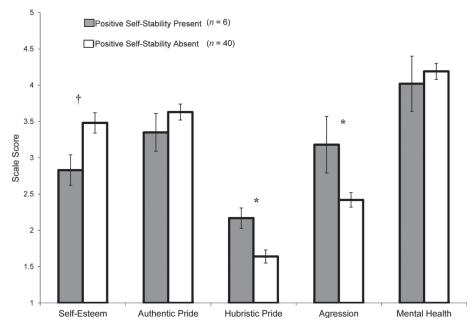
Autobiographical reasoning and emotional dispositions. No significant interaction emerged between positive self-change and negative self-stability in predicting trait authentic pride, $\beta = -.04$, $p = .77$, trait hubristic pride, $\beta = -.07$, $p = .65$, or aggression $\beta = .15$, $p = .35$, after mean levels of positive self-change and negative self-stability had been accounted for. In a comparable manner, after accounting for mean-levels of the applicable variables, no significant interactions emerged between sobriety length and positive self-change in predicting authentic pride, $\beta = .03$, $p = .87$, hubristic pride, $\beta = .26$, $p = .17$, or aggression, $\beta = .06$, $p = .77$. Consistent with hypotheses, participants who professed positive self-change evinced a higher level of authentic pride, $F(1, 44) = 12.91$, $p = .004$, $\eta_p^2 = .17$, and a lower level of hubristic pride, $F(1, 44) = 4.82$, $p = .03$, $\eta_p^2 = .10$, compared to those who did not make such a profession. Positive self-change remained a significant predictor of authentic pride after controlling for sobriety length, $F(1, 42) = 4.79$, $p = .03$, $\eta_p^2 = .10$, but became a marginally significant predictor of hubristic pride,

Figure 1. Psychological profile of those who did, and did not, profess positive self-change in their narratives. Error bars denote standard error of the mean. *$p < .05$.

$F(1, 42) = 3.75$, $p = .06$, $\eta_p^2 = .08$. Positive self-change did not serve as a significant predictor of dispositional aggression, $F(1, 43) = 1.26$, $p = .27$. Turning attention to processes of self-stability, the description of positive self-stability was not significantly related to authentic pride, $F(1, 44) = .77$, $p = .39$. However, participants who professed positive self-stability did evince a heightened level of hubristic pride, $F(1, 44) = 5.01$, $p = .03$, $\eta_p^2 = .10$, and aggression, $F(1, 43) = 5.94$, $p = .02$, $\eta_p^2 = .12$, relative to those who did not provide such a description. After controlling for sobriety length, positive self-stability remained a significant predictor of both hubristic pride, $F(1, 42) = 5.09$,

Figure 2. Psychological profile of those who did, and did not, profess positive self-stability in their narratives. Standard errors are indicated by vertical lines. †$p < .10$ *$p < .05$.
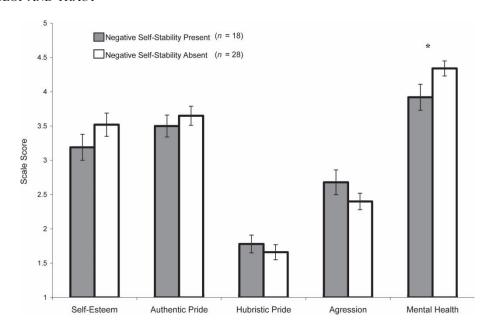
Figure 3. Psychological profile of those who did, and did not, profess negative self-stability in their narratives. Standard errors are indicated by vertical lines. *$p < .05$.

$p = .03$, $\eta_p^2 = .11$, and aggression, $F(1, 41) = 4.73$, $p = .04$, $\eta_p^2 = .10$. Finally, no relation was noted between negative self-stability and authentic pride, $F(1, 44) = .51$, $p = .48$, hubristic pride, $F(1, 44) = .51$, $p = .48$, or aggression, $F(1, 43) = 1.75$, $p = .19$.

Autobiographical reasoning and mental health. No significant interaction emerged between positive self-change and negative self-stability, $\beta = .05$, $p = .72$, nor between sobriety length and positive self-change, $\beta = .004$, $p = .99$, in predicting general health, once the mean levels of the applicable variables had been controlled for. As predicted, the overall mental health of participants who described positive self-change was significantly greater than that of participants who did not exhibit this form of autobiographical reasoning, $F(1, 42) = 5.37$, $p = .03$, $\eta_p^2 = .11$. After controlling for sobriety length, this relation was reduced to just below conventional significance thresholds, $F(1, 40) = 2.66$, $p = .11$, $\eta_p^2 = .06$; however, the magnitude of the group differences in general health remained moderate in size. Psychological health did not correspond with the profession of positive self-stability, $F(1, 42) = .26$, $p = .61$, whereas the mental health of participants who professed negative self-stability was poorer than that of those who did not exhibit this type of connection, $F(1, 42) = 4.06$, $p = .05$, $\eta_p^2 = .09$. This latter effect, too, was reduced to below conventional significance levels after controlling for

sobriety length, $F(1, 40) = 2.63$, $p = .11$, $\eta_p^2 = .06$. These results suggest that the relation between autobiographical reasoning and general health may be confounded by sobriety length; given the large amount of shared variance among all three variables this is an issue that cannot be disentangled here.

DISCUSSION

Autobiographical reasoning helps to further our understanding of the past, and contributes to life story coherence and the perception of personal persistence. Yet recent research has suggested that this form of reasoning is not always adaptive (e.g., Fivush et al., 2007; McLean et al., 2010). Here we argued that ambiguities regarding the benefits and potential downsides of autobiographical reasoning can be lessened by recognising its distinct constituents: processes of self-change and self-stability. With sensitivity to valence, these processes were examined among a sample of abstinent alcoholics. We noted distinct psychological profiles associated with change- and stability-based autobiographical reasoning processes, such that the depiction of positive self-change in participants' drinking stories corresponded with a heightened level of self-esteem, authentic pride, and mental health, and a lower level of hubristic pride; whereas the depiction of self-stability in these stories was associated with a heightened level of

hubristic pride and aggression, and with a diminished degree of mental health. All told, these results align with the proposal that noting a sense of positive character change in the wake of addiction may be adaptive (Dunlop & Tracy, 2012; Tedeschi & Calhoun, 1996), whereas establishing a sense of self-stability in these addiction-based experiences—be it positive or negative—may be maladaptive.

The current results thus underscore the importance of moving beyond attempts to place autobiographical reasoning in a catchall category. Change-based and stability-based reasoning processes have distinct developmental trajectories (Habermas & de Silveira, 2008), cultural antecedents (Chandler et al., 2003), and, here, were found to correspond differently to psychological adjustment. For these reasons, research on autobiographical reasoning would be furthered by an appreciation of its multi-dimensional nature.

Our examination of the divergent profiles associated with change-based and stability-based reasoning processes was conducted using a sample of abstinent alcoholics active in AA. Within this organisation, stories and storytelling are conceived as critical to the recovery process (Denzin, 2009; O'Reilly, 1997). The assumption inherent in the AA model is that the personal story formed around addiction and recovery is self-fulfilling. Thus constructing a redemptive story, whereby a positive personal change occurs in the aftermath of addiction, is thought to contribute to the sobriety and health of the teller (Dunlop & Tracy, 2012). Norman,[1] a participant in the present research who demonstrated levels of authentic pride, self-esteem, and mental health that were approximately one standard deviation above the mean, embodied this form of narrative. Norman's story began with his arrest for driving while intoxicated. As he described, "I had spent the night in the jail out in the valley, and the next morning on the way home, I picked up another ticket [for driving while intoxicated], and I remember, I was just, just right at my end, you know at the end of my ropes." Norman went on to describe that, later that evening, he chose to resist the urge to drink, noting that "I think that was the change that started to occur, and from then on, I didn't have a problem." He concluded his story by claiming that his interactions with the law had made him a stronger person.

The above notwithstanding, it is not entirely clear that narrating positive self-change following harrowing experiences is always adaptive. McAdams (2006a) proposed that life story coherence alone is not enough to ensure psychological benefit. Rather this coherence must be coupled with a sense of ownership over the story told. The description of self-change following trying circumstances (i.e., redemption) has been identified as a canonical (or master) narrative within Western culture (McAdams, 2006b), and the conferred status of this story within AA and beyond may create pressures to align one's experience with the narrative structure therein (see Denzin, 2009). Such alignment may come at the expense of personal authenticity. For this reason, the production of a narrative beaming with positive self-change alone is likely not enough to ensure psychological benefit. Future studies are needed to disentangle the structure and perceived authenticity of narratives to explore this possibility.

Furthermore it should be recognised that the correlational design of our study prevents us from concluding that the relation between the profession of positive self-change and adjustment is causal in nature. It may be the case that this form of autobiographical reasoning exhibits an influence on adjustment, or that the indices of adjustment considered here exhibit an influence on the profession of positive self-change, or that both are influenced by a third (unmeasured) variable (for similar discussion, see Bauer & McAdams, 2004). This limitation, of course, also applies to the other forms of autobiographical reasoning considered. To determine the nature of the relation between autobiographical reasoning and psychological adjustment, future studies are needed to examine these narrative processes using an experimental methodology.

In addition to emphasising a sense of self-change in one's narratives about drinking, AA also champions the recognition and acknowledgement of stable negative attributes. Debate exists among applied health practitioners and researchers, however, regarding the costs and benefits of focusing on such attributes (Brown, 1985). In the current study participants who exhibited a negative illustrative self-event connection in the context of their drinking stories (i.e., those who described a negative attribute) reported a lower level of psychological adjustment than those who did not exhibit such a connection. These results accord with Beck's (1967) notion that

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[1] All participants' names provided here are pseudonyms.

the recognition of negative personal attributes hinders psychological functioning. Such a relation is embodied by "Mark", a participant in our sample who reported a level of mental health approximately one standard deviation below the mean. Mark began his story with the proclamation that he is, in fact, an alcoholic. Using this characteristic to explain his behaviour following a suicide attempt, Mark stated that, "... he [a friend who had agreed to let Mark stay with him] had this bottle of wine in his house, and um, he um, he had it on the top shelf you know, and um, and I knew it was there, and I said, hell, I just tried to kill myself, I deserve a drink." Mark concluded by claiming that his choice to drink led him back to a life on the streets.

Interestingly, within our sample the recognition of a *positive* stable attribute was also associated with maladaptive psychological variables. Those who exhibited a positive illustrative self-event connection evinced a heightened level of trait hubristic pride and aggression relative to those who did not produce this type of connection. Janine, a participant whose levels of hubristic pride and aggression were approximately one standard deviation above the mean, embodied this profile. In Janine's story she credited her personal strength for the ability to attend events in which alcohol is served (e.g., bars, parties). Her story consisted of an instance in which she attended such an event, recalling that, "I just chilled all night ... just felt good about myself. I didn't drink the whole night, it was offered to me the whole night ... I don't drink, I'm just here chilling with them. I felt pretty good." Given the present results it is a matter of debate as to whether Janine's "strength" is actually conducive to her continued recovery.

The link observed between hubristic pride and positive self-stability reasoning is consistent with prior findings that the two facets of pride are associated with, and elicited by, distinct attribution styles; authentic pride is predicated on evaluations of specific behaviours performed by the self, whereas hubristic pride is predicated on global positive self-evaluations (Tracy & Robins, 2007). Thus individuals who tend to experience the emotions that constitute hubristic pride (e.g., arrogance, pomposity, snobbishness) may evince positive self-stability reasoning processes because they are prone to making the kinds of internal, stable attributions for positive events known to lead to hubristic pride. In contrast, the internal, unstable attributions associated with authentic

pride (which is constituted in part by feelings of accomplishment, fulfilment, and productivity; see Tracy & Robins, 2007) may underlie the association between this form of pride and self-change reasoning. Further studies are needed to more directly examine the role of attributions in the pattern of correlations found here between autobiographical reasoning processes and distinct emotions.

In our sample we noted a moderate negative relation between the profession of positive self-change and negative self-stability. Given the distinct associations between these reasoning processes and adjustment, it is conceivable that they serve as antecedents to differing recovery trajectories. As stated above, constructing a story which contains the profession of positive self-change may precede long-term alcohol abstinence. In contrast, crafting a story which contains the profession of negative self-stability may make the attainment of sobriety more difficult. To explore this possibility, and given that the relations between autobiographical reasoning and general health we observed may be confounded by length of sobriety, future longitudinal studies should examine the development of the types of narratives considered here. Another relevant factor to consider is the importance participants attributed to their stories, which likely varied among participants within our sample. Such perceived importance may carry implications for recovery and adjustment (Diamond, 2001), and should be examined in future research.

Although the current study made a number of contributions to our understanding of autobiographical reasoning, it also had several limitations that should be addressed in subsequent research. First, our sample was recruited entirely from within AA. While this allowed us to assess a group of individuals who were well versed in the art of narrating their drinking experiences, AA members differ in important ways from abstinent alcoholics who refrain from joining AA, or are no longer AA members (Hurlburt, Gade, & Fuqua, 1984; Singer, 1997). Thus it remains possible that the results observed here would not have emerged had non-AA members been considered. Second, although not uncommonly small for narrative studies (e.g., Bauer & McAdams, 2004), our sample was relatively modest in size. Third, both narratives considered pertained to participants' experiences with drinking. While this allowed us to conduct an examination of the autobiographical reasoning processes within narratives about one's addiction

and sobriety, it remains unclear whether these results would generalise to narratives about some other area in our respondents' lives (e.g., romantic relationships, employment). Finally, our research design prevented us from controlling the number of participants exhibiting each particular autobiographical reasoning process considered. For this reason some of these processes (i.e., positive self-stability) were rarely observed. As a result the relations noted between these processes and psychological adjustment should be interpreted with caution. Few researchers, however, have examined stories pertaining to substance abuse using an idiographic-nomothetic framework and, due to the emphasis these stories receive within recovery programmes, more studies such as this one, examining the relation between drinking stories and psychological adjustment, are needed.

Future studies in this vein should seek to obtain larger samples, composed of both AA members and non-members, utilise both experimental and longitudinal designs, and consider objective (e.g., medical histories) and subjective measures of adjustment. Such efforts, when combined with the current research, will inform understanding regarding the distinct roles that the autobiographical processes of self-change and self-stability play in the maintenance and enhancement of psychological adjustment.

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