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To cite this article: Nieves Martínez-Hernández & Jorge Ricarte (2018): Self-defining memories related to alcohol dependence and their integration in the construction of the self in a sample of abstinent alcoholics, *Memory*

To link to this article: <https://doi.org/10.1080/09658211.2018.1493128>



Published online: 26 Jun 2018.



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## Self-defining memories related to alcohol dependence and their integration in the construction of the self in a sample of abstinent alcoholics

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### ABSTRACT

Using a self-defining memory task, this work studies the exact moment in which abstinent alcoholics perceived themselves as addicted. Phenomenological variables involved in the memory were obtained asking participants to evaluate their cognitions, perceptions and emotions associated with that self-defining memory. The sample consisted of 12 female and 31 male ex-alcoholics, with abstinence ranging from 6 months to 23 years. Mean age was 52.91 years. Our findings showed that awareness of the alcoholic self emerges in the context of uncontrolled consumption or an ultimatum from family members. This type of memory had a positive valence for most of the participants, regardless of the memory perspective (actor versus spectator). Those who remembered from an actor perspective, perceived the event as providing higher growth and personal learning. These results show the importance of exploring situations of uncontrolled consumption and family dynamics in the self-recognition of alcohol dependence. In addition, reinforcing an actor perspective compared to a spectator perspective might result in higher levels of personal enrichment, which may help maintain a patient's long-term recovery. These results support the use of autobiographical memory techniques to enhance awareness of the addicted self, and suggest the need to include these interventions in rehabilitation programmes.

### ARTICLE HISTORY

Received 4 October 2017  
Accepted 20 June 2018

### KEYWORDS

Self-defining memory;  
alcoholism; self-perception;  
addiction

Recent studies have highlighted the importance, especially in defining the self, of autobiographical memories known as self-defining memories. Singer and Moffitt (1992), describe self-defining memory (SDM) as vivid, affectively intense and important, repetitively recalled autobiographical memories, linked to other similar memories. According to Singer and Blagov (2000), there are four dimensions of self-defining memory: specificity, memories are highly concrete; meaning, the memories are important for the individual recalling them; content, the memories refer to a key event; and affect, the memories are high in emotional content. Self-defining memories represent a specific subtype of autobiographical memories that form an individual's self-definition (Sönmez, 2009). Autobiographical memory and the self are two extensive psychological constructs that interact, and are formed, defined and reconstructed mutually (see, for example, Conway & Pleydell-Pearce, 2000; Conway, Singer, & Tagini, 2004; McAdams, 2001; Singer & Salovey, 1993). Regarding the structure of SDMs (Blagov & Singer, 2004), they may be classified as specific, representing event-specific knowledge in the Self Memory System model (Conway & Pleydell-Pearce, 2000), or non-specific. Specific memory narratives include at least one sentence focusing on uniqueness of occurrence, containing events lasting less than a day. Specific SDMs are perceived as an

uninterrupted unity. Non-specific narratives of SDMs include episodic and generic events. Episodic SDMs are narratives of sequential events that fit into a single time-frame. Generic SDMs are composed of equivalent events that repeatedly occur over time intervals. Studies on self-defining memory initially focused on its functioning, how our personal memories constitute what we are and how this type of memory is stratified or fragmented into different types of storage (Singer & Bluck, 2001). However, a growing number of studies have analysed the impact of self-defining memories on clinical populations, such as persons with amnesia (Conway, 2005) or psychotic patients (Berna et al., 2011).

Perception of control over drinking differs at different stages of alcohol dependence with high self-deception acting as predictor of active users (Strom & Barone, 1993). Research conducted at alcohol addiction centres calls for intervention programmes that reduce denial and increase a realistic self-view in patients (Ferrari, Groh, Rulka, Jason, & Davis, 2008). Thus, the detection of realistic self-defining memories related to an alcohol dependent self, as proposed in the current work, would be helpful in detecting variables involved in increasing self-awareness of problems with alcohol consumption. An important step for recovery from alcohol abuse is the acknowledgement of having a real problem with alcohol, and

self-defining memories, because of their characteristics, might be highly useful in this process. Discovering the characteristics of the specific moment at which patients describe themselves as alcohol-dependent, regardless of whether it is a recreated concrete moment or the summary of similar repeated negative experiences, would help enormously to establish a more accurate self-definition without self-deception. This effort of self-definition and self-recognition would permit the start of the recovery procedure because help from family or therapists could then be accepted with a more sincere commitment from patients. In fact, previous evidence suggests that, in people with severe alcohol use disorder, a disruption of the process of integrating SDMs could impact on maintaining personal goals and be a high risk factor for chronicity of alcohol dependence (Nandrin & Gandolphe, 2017).

The construction of a self-defining memory draws on a series of variables that place this memory in a specific, personal context known as phenomenological experience. One of the core phenomenological variables of self-defining memories is memory perspective. Nigro and Neisser (1983) identified two perspectives: a first-person perspective, in which individuals perceive memories through their own eyes, and a third-person perspective, in which people view their memories from the vantage point of an observer (they see themselves in the recollection). These authors found that third-person memories tended to be older and less vivid than first-person memories. They also reported that memory perspective is malleable. Thus, individuals are more likely to recall an episode from a first-person perspective if asked to focus on the emotion associated with the event. In other words, "individuals prefer an observer perspective for their most emotionally charged memories" (Alonso-Quecuty, 1990, p. 3).

The perspective of autobiographical memory is also linked to self-concept (Libby & Eibach, 2002; Libby, Eibach, & Gilovich, 2002). Individuals are more likely to invoke a first-person, or actor, perspective when recalling actions that are consistent with their current self-concept. Libby et al. (2002) found that individuals who were induced to remember from a third-person, or observer, perspective reported that the characteristics of their self-concept (personality, priorities, etc.) had undergone greater changes compared to individuals induced to recall from a first-person perspective. According to Wilson and Ross (2003) an observer perspective appears to operate as a distancing mechanism, leading individuals to perceive the past self as a different person from the current self. This responsiveness to change has been linked to high levels of satisfaction with the current self (Fischer et al., 1999; Norman, Stratford, & Regehr, 1997). As a result of the distancing generated by observer narrative, memories are recalled with less guilt and fewer defensive strategies: observer recollection reduces the psychological threat of negative experiences without denying their occurrence (Lawrence, 1990). Furthermore,

individuals remembering events from an observer perspective report enhanced understanding of the episodes (Fergusson, 1993) and feel attenuated emotional intensities of positive and negative autobiographical memories (Gu & Tse, 2016).

### *Alcohol addiction and autobiographical memory*

There are very few studies on the functioning of autobiographical memory in persons with alcohol addiction. The scarce literature on the association between alcohol addiction and autobiographical memory examines the extent to which sober alcoholics' narratives on their detoxification reflect processes of autobiographical reasoning indicative of self-change and self-stability. Individuals whose narratives revealed a positive attitude towards the self-change they had enacted as a result of their abstinence presented higher levels of self-esteem, authentic pride and mental health than abstinent alcoholics whose narrative implied a sense of self-stability. In addition, the latter scored higher on aggression and hubristic pride (Dunlop & Tracy, 2013a).

These same authors (Dunlop & Tracy, 2013b) examined whether the production of a narrative containing self-redemption (in which the narrator describes a positive personality change following a negative experience) predicts positive behavioural change. They analysed the autobiographical narratives produced by alcoholics who had been abstinent less than 6 months and those of alcoholics who had maintained abstinence for over 4 years. Their results showed that newly abstinent alcoholics whose narratives contained self-redemption were more likely to maintain abstinence in the following months compared to peers whose narratives were non-redemptive.

Finally, the aim of the study by Cuervo-Lombard, Raucher-Chéné, Barrière, Van der Linden, and Kaladjian (2016) was to broaden knowledge on impaired autobiographical memory specificity in patients with alcohol dependence. Specifically, they investigated how changes in the memory of autobiographical events may impact on the self-concept of persons with alcohol dependence, recently abstinent from alcohol for 10 days to 6 months. Their results showed that the patients' autobiographical memories were significantly less specific and contained more reference to alcohol than those of controls. Additionally, patients reported more autobiographical memories with negative valence and higher emotional intensity than controls. These results suggest that recently abstinent alcohol-dependent patients may be prone to defining themselves in terms of negative events associated with alcohol consumption, which may contribute to an unfavourable perception of their self and subsequently of their ability to maintain abstinence.

The studies cited in the preceding literature review focus on the production and content of autobiographical narratives by abstinent alcoholics. These narrations may reflect self-change (Dunlop & Tracy, 2013a), self-redemption

(Dunlop & Tracy, 2013b) or may represent impaired recollection, affecting self-concept (Cuervo-Lombard, Raucher-Chéné, Barrière, Van der Linden, & Kaladjian, 2016). However, and despite the encouraging nature of their findings, they do not specifically study self-defining memories in abstinent alcoholics, which, by virtue of defining the self, might play a significant role in these patients' personal satisfaction. This type of memory may constitute a key line of research in optimising rehabilitation therapy in formerly alcohol-dependent patients.

The literature, then, provides us with knowledge on autobiographical memory, self-defining memories, autobiographical memory in the context of alcoholism and memory perspective in self-defining memories. However, to the best of our knowledge, there are no studies on the effect of perspective and self-defining autobiographical memories in abstinent alcoholics. Thus, the aim of the current work is to enhance the knowledge on autobiographical and self-defining memories relating to alcoholism. Specifically, we investigate the exact moment at which alcoholics perceive themselves as alcohol-dependent and how this impacts on self-concept and the way they cope with abstinence, recovery and their current life in terms of personal growth.

To assess the specific autobiographical memory of the moment when an individual recognises their addiction, we selected the Self-defining Memory Task (Blagov & Singer, 2004; Thorne, McLean, & Lawrence, 2004). This instrument assesses the phenomenological characteristics of a highly significant and relevant autobiographical memory. Specifically, the abstinent alcoholic participants evaluated the phenomenological experience associated with the moment in which they realised they were addicted to alcohol. Thus, we will be able to identify the phenomenological variables that are key to activating and promoting higher awareness of the addicted self in patients struggling to recognise their addiction. In addition, we aim to analyze whether memory perspective (actor vs. observer) may have therapeutic implications in autobiographical memory based interventions in persons with alcohol dependence.

Our first hypothesis is that the moment when a person recognises he or she is addicted to alcohol will be defined as a moment including situations of major personal crisis, although the specific type of situation is as yet unidentified. Second, we expect the memory to satisfy the characteristics of a self-defining memory (Singer & Blagov, 2000) and, as such, to be highly significant in the definition of the patient's current self-concept (Sönmez, 2009). In view of previous findings in this type of study (Cuervo-Lombard et al., 2016), we expect the memory to be negatively valenced. Finally, we expect that participants who recollect the event from an observer perspective to have a greater understanding of the episode recalled (Ferguson, 1993), higher perception of the self-change accomplished (Wilson & Ross, 2003), and, in turn higher life satisfaction (Fischer et al., 1999; Norman et al., 1997).

## Methodology

### Participants

For this study, we selected a sample of former alcoholics abstinent for over 6 months from among members of associations for recovering alcoholics in a province of south-east Spain. Of the initial 50 participants, 7 failed to complete the study as they were unable to identify the specific moment they recognised their problem with alcohol. Thus, the final sample comprised 43 participants (12 females and 31 males), with a mean age of 52.91 years and a standard deviation of 9.92 years. The most common marital status was married (58.1%), followed by divorced (16.3%) and single (16.3%). The most frequent employment status was permanent (48.8%), followed by retired (23.3%). The most common level of professional qualification was medium (paid employment and self-employed) (67.4%) or high (e.g., senior executives) (11.6%). As regards educational level, 65.1% had completed primary education, 23.3% had completed secondary education and 4% of participants reported university-level education. A total of 58.1% of participants reported having received treatment for a mental health problem, while 23.3% reported they were receiving psychological treatment at the time of assessment. Serious physical illness (diabetes, heart problems, etc.) was reported by 30.2%. Cross-addictions were considered an exclusion criteria. When the questionnaire was administered, participants' abstinence ranged from 6 months to 23 years. Mean abstinence was 6 years 8 months with a standard deviation of 7 years 6 months. Regarding participants' approach to abstinence, they first attended medical consultation for drug prescription. They subsequently enrolled in associations for recovering alcoholics, where they received social skills training, participated at self-help groups and received therapy sessions for anxiety and depression problems. They did not follow a standardised 12 step AA-style programme as it is not an established procedure in the associations that participated in the current research. Finally, 11.6% of participants reported having been victims of physical or psychological maltreatment.

### Instruments

Participants were assessed using the Self-Defining Memory Task (Blagov & Singer, 2004; Thorne et al., 2004). SDMs were evaluated following an adaptation of the procedure designed by Singer and Moffitt (1992). The first step consisted of a detailed description of what constitutes a SDM accompanied by examples. Once the experimenter was sure that participants had understood what an SDM was, they were asked to write down an SDM using this specific prompt: "Do you remember the exact moment you realized you were addicted to alcohol?". This questionnaire requires respondents to evaluate characteristics associated with a self-defining memory. In our study, participants were prompted to

recall the specific moment they perceived themselves as addicted to alcohol. Following their description of this moment, participants responded to 22 questions to obtain details related to the event as described in previous work by Berna et al. (2015), using the Centrality of Events Scale (Berntsen & Rubin, 2006) and the scales of non-specific aspects of personal significance suggested by Wood and Conway (2006). They were first asked their age when the event occurred. Items 1–3 focus on the clarity of the recalled episode in the participant's memory, with scores ranging from 1 (vague) to 7 (clear). The dichotomous item 4 asks whether the memory has a positive or negative value for the respondent, while item 5 assesses the intensity of this valence (1 to 7). Item 6 refers to whether the individual remembers the event from an observer perspective or actor perspective, or both. Items 7 to 22 evaluate the implications of this remembered event in the individual's life, scored on a scale from 1 (not at all) to 7 (very much). This instrument has proven effective especially in studies on depressive disorder (Moffitt, Singer, Nelligan, Carlson, & Vyse, 1994; Werner-Seidler & Moulds, 2012) and post-traumatic stress disorder (Jobson & O'kearney, 2008).

### Procedure

First, we drafted a project proposal to be evaluated by the Research Ethics Committee in the province where the study was to be conducted. Once the project had been submitted and approved by the Ethics Committee, we proceeded to select the sample. To this end, we contacted three associations for recovering alcoholics and, after explaining the nature of the research to the associations' directors and psychologists, meetings were arranged to sign collaboration agreements between the University of Castilla-La Mancha and these organisations. Once the agreements were signed, we set up meetings with the psychologists and the users of the different associations to inform the potential participants of the research aim and methods. Individual meetings with the members wishing to participate were then scheduled at the facilities of each association. The participants first signed the informed consent forms, which emphasised the anonymity and confidentiality of the information provided. They then answered a sociodemographic questionnaire, providing the information for the description of the sample. Finally, they completed the Self-Defining Memory Task, supervised by the main project researcher who clarified any doubts that arose.

### Statistical analysis

Our statistical analysis was conducted using IBM SPSS Statistics 23. First, descriptive analyses of the sample characteristics were performed, using the data provided in the sociodemographic questionnaire. Then, to identify the highest scores and highest response frequencies on

the SDM-task items, we calculated the means, standard deviations and frequencies (in percentages) of the responses to the questionnaire. To determine whether the perspective adopted by the participants (observer, actor or both) was significantly more or less frequent in positive memories compared to negative memories, we calculated the differences in proportion distribution using  $\chi^2$ . We then conducted three-level ANOVAs, using the memory perspective variable as the between-subjects factor and each of the SDM-Task items in order to determine the effects of memory perspective on the phenomenological experience associated with the moment of self-perception of alcohol dependence. The post-hoc analyses to determine the specific differences between the three groups were conducted using the Tukey test.

## Results

### *Content of autobiographical memory as an alcohol dependent individual*

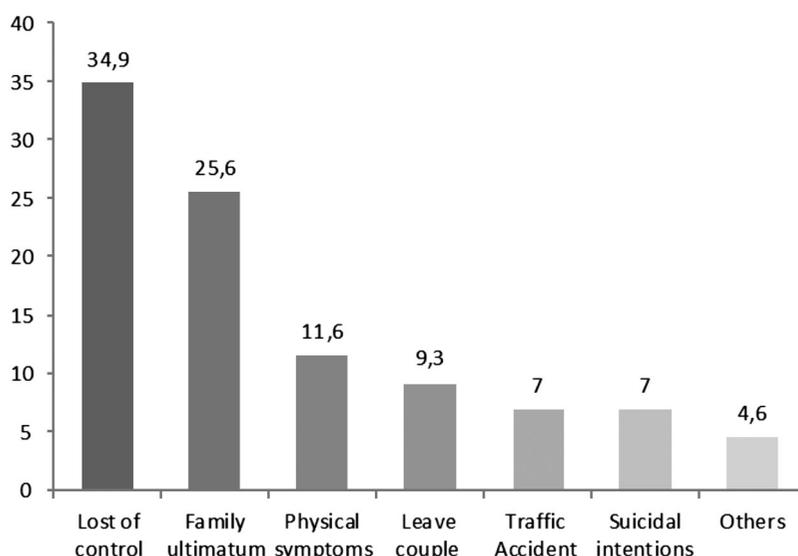
Figure 1 shows that 34.9% of the respondents reported a moment when they felt they had lost control of their alcohol consumption either because they needed alcohol to get through the day or because they could not stop drinking alcohol even though they were trying to give it up (for example, on a day they had decided not to touch alcohol, they found themselves drinking). More than a quarter of the sample (25.6%) reported the moment as occurring after a family ultimatum, that is, a family member had told them they had to stop drinking. Noticing physical symptoms stemming from alcohol abuse was reported as the reason by 11.6% of participants. A total of 9.3% recognised their alcohol dependence as a result of their partner leaving them. Having a traffic accident while driving under the effects of alcohol was reported as the moment of self-perception by 7%. Another 7% accepted their dependence after having suicidal wishes or intentions. Finally, 4.6% identified as alcohol dependent following a bar fight or job loss.

### *Age at the time of the event*

The mean age at which the recalled event occurred is 41.19 years, with a standard deviation of 8.27. It is worth noting the marked divergence between this figure and the mean age of the participants, which was 54.30 years, with a standard deviation of 10.16 and the mean period of abstinence, which was 6.33 years, with a standard deviation of 7.18.

### *Phenomenological experience of the memory*

Table 1 shows the results for the items on the phenomenological experience associated with the memories analysed in this study. As can be seen, the responses with the highest agreement, that is, with the lowest standard



**Figure 1.** Content of the memory by percentage frequency.

deviation, correspond to item 19 (I have learned more about what life is all about) with a standard deviation of 0.63; item 21 (I think about how it has affected me) with a standard deviation of 0.95; item 18 (I have more insight into who I am) whose standard deviation is 1.14; and 15 (Do you blame yourself for what happened?) with a standard deviation of 1.15. Additionally, the scores on these items are exceptionally high, 6 out of a possible 7. The items with the most disparate results were item 11 (How angry do you get when you remember this event?) whose standard deviation is 2.67, followed by item 5 (In general, the memory is, for me ...) and 13 (Did you feel your physical integrity was threatened?) both with a standard deviation of 2.40. Finally, it is worth noting that all the scores are high, mainly around 5, with values ranging

from 4 to 6.7, with the exception of item 12 (Did other purposely try to hurt you?) and 14 (Do you blame others for what happened?), which with scores of 2.6 and 2.3 respectively, are the only items that scored below 3.

### **Valence and memory perspective**

Generally, the participants attributed a more positive than negative value to the memory of their self-recognition as alcohol dependent: 23.3% reported the memory as negative and 76.7% as positive. As regards memory perspective, 30% adopted an observer perspective, 25.6% an actor perspective and 44.2% both.

In addition, using  $\chi^2$ , we calculated the differences in the percentage distribution of items 4 (In general, the

**Table 1.** Means and standard deviations for the SDM items.

N°	Item	Scores	Mean	SD
SDM1	My memory of what I have just narrated is	(1 Vague – 7 Clear)	6.28	1.50
SDM2	I remember what I have just narrated with	(1 Few details – 7 Many details)	5.51	1.79
SDM3	In my mind, the order of the events is	(1 Confused – 7 Clear)	5.53	1.98
SDM4	In general, the memory is, for me	Negative 23.3% / Positive 76.7%		
SDM5	This value (negative or positive) is	(1 Not very intense – 7 Very intense)	4.70	2.40
SDM 6	In this event, I was: an observer, an actor or actor and observer	Observer 30% / Actor 25.6% / Both 44.2%		
SDM 7	This event had major consequences in my life	(1 Not at all – 7 Very much)	6.28	1.27
SDM 8	Do you remember how you felt when the event occurred?	(1 Not at all – 7 Very much)	6.26	1.36
SDM 9	This event tells a lot about who I am	(1 Not at all – 7 Very much)	5.88	1.78
SDM 10	I have been thinking about this event ever since it happened	(1 Not at all – 7 Very much)	5.49	2.01
SDM 11	How angry do you get when you remember this event?	(1 Not at all – 7 Very much)	4.23	2.67
SDM 12	Did other purposely try to hurt you?	(1 Not at all – 7 Very much)	2.65	2.31
SDM 13	Did you feel your physical integrity was threatened?	(1 Not at all – 7 Very much)	3.95	2.40
SDM 14	Do you blame others for what happened?	(1 Not at all – 7 Very much)	2.30	1.99
SDM 15	Do you blame yourself for what happened?	(1 Not at all – 7 Very much)	6.37	1.15
SDM 16	This event has had a big impact on me	(1 Not at all – 7 Very much)	6.19	1.61
SDM 17	I feel I have grown as a person since this event	(1 Not at all – 7 Very much)	6.37	1.51
SDM 18	I have more insight into who I am	(1 Not at all – 7 Very much)	6.56	1.14
SDM 19	I have learned more about what life is all about	(1 Not at all – 7 Very much)	6.72	0.63
SDM 20	I have learned more about what other people are like	(1 Not at all – 7 Very much)	6.37	1.45
SDM 21	I think about how it has affected me	(1 Not at all – 7 Very much)	6.26	0.95
SDM 22	I have often spent time thinking about what the event means to me	(1 Not at all – 7 Very much)	5.35	2.15

memory is, for me ... negative or positive) and 6 (In this event, I was: an observer, an actor or actor and observer) in order to determine whether the perspective adopted by the participants (observer, actor or both) was significantly more or less frequent in positive memories compared with negative memories. However, we found no differences in the attribution of a positive or negative value to the memory according to the memory perspective,  $\chi^2_{(2)} = .15, p = .92$ .

### Effects of memory perspective on phenomenological experience

Memory perspective (observer, actor or both) had a significant effect on perceived personal growth (SDM17)  $F(2,42) = 4.34, p = .020$ , on self-insight (SDM18)  $F(2,42) = 4.21, p = .022$ , learning about life (SDM19)  $F(2,42) = 3.44, p = .042$  and time spent thinking about the meaning of the event (SDM22)  $F(2,42) = 4.05, p = .025$ .

As shown in Table 2, the results of the post hoc test reveal that the individuals who remembered the event from the perspective of actor or actor and observer scored higher on these four items compared to the participants who recalled the event from an observer perspective. More specifically, in item 17, (I feel I have grown as a person since this event) those who remembered the event from both an actor and observer perspective scored higher than those who recalled the episode from only an observer perspective ( $p = .015$ ). The same results were found for the perceived memory experience measured by item 18 (I have more insight into who I am) ( $p = .024$ ) and item 19 (I have learned more about what life is all about), ( $p = .032$ ). However, those who remembered the event from only an actor perspective scored higher on item 22 (I have often spent time thinking about what the event means to me) compared with the participants who remembered from an observer perspective ( $p = .021$ ). This suggests that the ability to remember the event as both actor and observer fosters processes of self-learning while remembering from an actor perspective encourages thinking about the meaning of the event.

The effect of memory perspective on emotional intensity was tested using perspective (actor, observer or both) as independent variable and emotional intensity as dependent variable, using ANOVA. Although mean scores in emotional intensity were higher from an actor perspective (mean = 5.36) than from an observer perspective (mean = 4.54), these group differences were non-significant,  $F(2,42) = .56, p = .57$ .

**Table 2.** Differences in self-perceptions according to memory perspective, using the Tukey test.

	Observer__M (SD)	Actor__M (SD)	Both__M (SD)
SDM17	5.46 (2.44)	6.45 (0.82)	6.95 (0.23)
SDM18	5.85 (1.86)	6.82 (0.41)	6.89 (0.32)
SDM19	6.38 (0.87)	6.73 (0.65)	6.95 (0.23)
SDM22	4.15 (2.19)	6.45 (1.51)	5.53 (2.12)

## Discussion

### Autobiographical memory content

The content of the memories that participants defined as the specific moment they recognised their alcohol dependence was mainly associated with uncontrolled consumption (34.9%) or a family ultimatum (25.6%), which, according to Basiaux et al. (2001) are situations related to low self-directedness, one of the differential traits found in the alcohol-dependent population. Self-directedness includes factors such as daily life skills (personal hygiene, feeding oneself), engaging with personal goals, or locus of control (Costello & Manders, 1974; Tiffany, 1967). Low self-directedness is associated with an external locus of control, that is, not taking responsibility for one's actions or situation in life, attributing them to external factors such as luck. Consequently, sensation of loss of control experienced by individuals with alcohol dependence and the fact that family members need to make decisions for them (taking them to therapy or pressurising them to go by means of an ultimatum) reflect low self-directedness. Furthermore, our results show that the mean period between participants recognising their addiction and starting rehabilitation was 6.3 years. This also highlights their low self-directedness and the need to recognise the alcoholic self as soon as possible, since the decision to commit to treatment tends to take time.

Specialists in autobiographical memory measurement accept the reconstruction of these kind of memories each time they are retrieved (e.g., Alberini & LeDoux, 2013). This is known as memory reconsolidation. Furthermore, in samples with severe psychopathology such as schizophrenia, autobiographical memories have been proven to be reliable (e.g., Ricarte, Hernández-Viadel, Latorre, & Ros, 2012). Although we are unable to provide evidence that memories in our study were crystallized or of pivotal importance, participants reported information about specific moments in their life that were unlikely to be repeated (e.g., a concrete suicide attempt, a car accident, the day their partner left them) and that were highly detailed in cases of lack of control (e.g., "one day I went to work in the fields far from the city and I had to come back to buy beer, but I forgot to buy water"). Even in the case of physical symptoms, which are more likely to be repeated, participants reported a concrete moment (e.g., "one day, I started to tremble so hard that I couldn't cook, I turned yellow and started to vomit repeatedly, I went to the doctor and was diagnosed with hepatic cirrhosis"). Most importantly, taking into account the aims of the current work, which focuses more on the detection of a Self-Defining memory than on the process of construction of autobiographical memories, the experiences related by participants wholly fulfilled the characteristics of a Self-Defining memory, as can be observed in the results section.

The construction of identity through narratives is highly determined by cultural contexts of development, as has been observed, for example, in Israeli and Palestinian

samples (Bar-Tal & Salomon, 2006) or gay male population (Cohler & Hammack, 2007). Moreover, repeated exposure to narratives impacts views, feelings and actions toward a specific conflict (e.g., Ron & Maoz, 2013) and stigmatised groups can be engaged in narratives of dominant discourses about themselves which may challenge the construction of a coherent self (Toolis & Hammack, 2015). Thus, it cannot be ruled out that our participants reported a master narrative (Hammack, 2008) reflecting a culturally shared template for how the memory or story unfolds.

Future research should focus on the contextualisation of self-defining memories (unremoved from the social process of their construction), which was beyond the scope of the current research. Although the relevant impact of social and cultural factors on the emergence of autobiographical memory has been established in seminal works on this topic (Nelson & Fivush, 2004), this important component of autobiographical narratives is the subject of scant research. The narratives of SDMs are not only constructed personally, but also socially, in particular contexts of social interchange.

### *Phenomenological experience of the memory*

Regarding the results of the SDM scale, it is worth noting that the items reflect different dimensions on which this type of self-defining memory is constructed and stored in our memory. In this regard, the key functions are learning about oneself, learning about life and the internal attribution of the memory (Blagov & Singer, 2004). The results of our study show that these functions correspond directly to the items with the highest scores and highest response agreement. This confirms that the memories described by our participants, the moment they realised they were alcohol-dependent, are self-defining memories. As demonstrated in studies in other types of population, the memories refer to an event that helped individuals to learn more about life and about themselves, and which was key to the definition of their current self (Conway & Pleydell-Pearce, 2000; Conway et al., 2004; McAdams, 2001; Singer & Salovey, 1993; Sönmez, 2009). This finding corroborates the effectiveness of the procedure used in retrieving a self-defining autobiographical memory in alcoholic-dependent population. Hence, it could be used to explore autobiographical mechanisms and cognitive functions involved in alcohol dependence.

In the same vein, number 15 (Do you blame yourself for what happened?) was also one of the items with the highest scores (6.37) and with high response agreement (standard deviation of 1.15). This item illustrates the self-attribution factor and suggests that the participants largely blame themselves for their alcohol dependence. This factor of internal attribution, characterised by an internal locus of control, was suggested by Epstein (1973) as part of the self that develops after a moment of personal crisis. In other words, according to Epstein, personal crises whose causes individuals self-attribute and which then

form part of their self-concept, generate self-defining memories. This highlights the importance in the effective rehabilitation of patients with addiction of an internal attribution of the problem (Rose, Bearden, & Teel, 1992; Santos Diez, González Martínez, Fons Brines, Forcada Chapa, & Zamorano García, 2001).

### *Valence of the memory*

Regarding the valence of the memory (positive vs. negative), our results show that the memory of the self-recognition of addiction was largely perceived as positive. This finding is inconsistent with those of previous studies and also with our hypothesis of an expected negative valence associated with a moment of personal crisis. At this point, it is important to highlight the moment of a patient's detoxification. When detoxification is recent, SDMs have a predominant negative valence (Cuervo-Lombard et al., 2016; Nandrino & Gandolphe, 2017). The fact that the average time of abstinence in our sample was approximately seven years may be partly responsible for these divergent results. The fact that our participants reported that this moment had changed their lives positively bringing to them a greater insight into their lives suggests our patients had tapped into the notion of redemption sequences defined by McAdams, Reynolds, Lewis, Patten, and Bowman (2001). These sequences are episodes in our lives which were initially lived and perceived with a negative valence but which then change (or redeem) towards a positive valence as they originate a turning point in our lives which forces us to implement strategies of personal self-improvement and growth. Narrators often explain they believe they "have experienced a second chance in life" as a result of these episodes (McAdams, 2006). As shown in previous studies on alcoholic patients, it is important to identify and encourage these redemption sequences as they facilitate better prognosis and enhance potential for recovery from addiction (Dunlop & Tracy, 2013b).

### *Memory perspective*

The most common perspective reported by the participants of their moment of self-awareness of addiction was that of both actor and observer, followed by that of only observer. Previous results in memory perspective show that participants with a history of recurrent depression (Kuyken & Moulds, 2009) recalled more negative and positive memories from a field perspective (76.47% and 82.41%) than from an observer perspective (23.53% and 17.59%). Analysis of the effects of each of the memory perspectives on the phenomenological experience variables revealed that participants who recalled the event from an actor perspective or from both actor and observer perspective were those who scored higher on personal growth, self-insight, learning about life and meaning making. This is consistent with previous findings in which the awareness

of perspective shift is related to high levels of satisfaction with the current self (Fischer et al., 1999; Norman et al., 1997) and underscores the importance of cognitive flexibility in emotional and cognitive processing of key events in our life stories. Gu and Tse (2016) highlighted the importance of cognitive flexibility by showing that when participants are induced to shift their memory perspective, the emotional intensity of their narrative also changes. Narrative perspective shift to observer reduces emotional intensity in both positive and negative autobiographical memories. At the start of the detoxification process (initial abstinence), this type of memory is usually retrieved from an observer perspective to mitigate the negative emotional impact (Cuervo-Lombard et al., 2006). However, over time, and to ensure internal attribution of the event and the process of personal growth, the shift to an actor perspective is important to increase time spent thinking about the event and thus benefit more from the redemption phenomenon in the first person. This suggests that the ability to engage with the memory emotionally and yet step back and ponder it with a certain distance may be the optimal way to gain understanding and insight from the experience.

### Conclusions, limitations and future research

In rehabilitation therapy, it is key that individuals with alcohol dependence recognise they have a problem with alcohol, and consequently have a real wish to stop drinking (Santos Diez et al., 2001). Until this self-perception occurs, alcoholics attend rehabilitation as a result of external forces, either a family ultimatum or a legal order. Thus, therapy is ineffective as they do not identify with their alcohol dependence and adopt a passive, defensive and even aggressive attitude during therapy. Over time, and after exposure to other alcoholics and their respective stories, participants in rehabilitation tend to discover the stories they hear are much the same as theirs. The process of self-recognition as an addict then begins, following the different stages of alcohol abstinence as set out in the classic transtheoretical model of change developed by Prochaska (1996): precontemplation, contemplation, preparation, action, maintenance and termination. These stages were later corroborated in a study by Carbonari and DiClemente (2000), who found that the likelihood of a return to heavy drinking depended on the stage of the process the patient was at. Thus, it is at the action stage of change that alcoholics attend therapy, and self-defining-based memory therapy should thus be administered at the maintenance stage.

The time that elapses between a participant's initiating therapy and self-recognition as alcohol-dependent and when the therapy starts to be effective may be long and both financially and psychologically costly for the patient and their family. Consequently, it is key to conduct research on the types of specific moment that help alcoholics recognise their drink problem, so as to guide patients towards

reasoning processes that facilitate self-awareness of their situation and so accelerate recovery. Individuals who have not recognised their addiction, could be helped at the onset of abstinence by the use of autobiographical narratives focused on situations of uncontrolled consumption and family ultimatums.

As our results show, third-person autobiographical narratives may initially help individuals to emotionally distance themselves from the memory and so reduce its emotional load, but with the aim of encouraging a cognitive flexibility that permits shifts in memory perspective, thus generating enhanced personal growth. Patients who recall the self-discovery of their alcohol dependence either from an actor perspective or from both an actor and observer perspective exhibit higher levels of personal growth across the rehabilitation process, and thus are more likely to maintain long-term recovery.

The limitations of this study are mainly related to the small sample size. It is also worth remembering that the sample comprised participants with long-term abstinence and thus the results might not be applicable to recently abstinent patients. An interesting future line of research would be a longitudinal study, with the help of family members, on the detection and subsequent assessment of cognitive and autobiographical reasoning mechanisms in patients unable to recognise their addiction. The assessment of emotional valence produced by the SDMs retrieved in the current research is also limited. First, we did not assess to what degree memories were positive or negative, as we obliged participants to choose between a positive versus negative valence, neglecting the mixed nature of many emotional responses. Secondly, we omitted the question of the current emotion produced by the SDMs, thus ruling out the possibility of exploring any phenomena related to the change in SDM affect over time, such as redemption sequences (see Wood & Conway, 2006). Future studies should more precisely explore the emotional response and evolution in emotion perception generated by SDMs related to dependence and/or abuse.

### Disclosure statement

No potential conflict of interest was reported by the authors.

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