Investigating the role of semantic self-images and episodic memories of autobiographical memory in wellbeing between middle-aged and older adults. Evidence for a new role of semantic self-images

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Abstract:

The main focus of autobiographical memory research was on episodic elements of autobiographical memory. Recent studies highlight an emerging role of semantic elements of autobiographical memory. We examined 32 middle-aged adults and 33 adults of advanced age to explore how they differentiate in dimensions of semantic self-images (a particular subtype of semantic autobiographical memory) and episodic autobiographical memories and investigate the roles of semantic self-images and
episodic autobiographical memories in their wellbeing. Semantic self-images were found to be more important for adults of advanced age, emerge in a similar age and share same themes with middle-aged semantic self-images, while adults of advanced age have been found to have a significant bigger mean age of episodic memories’ formation. Emotional valence scales of semantic self-images and episodic autobiographical memories and a measure of wellbeing were used. Results showed that the emotional valence of semantic self-images was closer to wellbeing than episodic memories in middle-aged adults, while in adults of advanced age it was found that both elements of autobiographical memories are linked similarly in their wellbeing. These findings are discussed and we suggest a new mediating role of semantic self-images for self-consistency and self-continuity in adults of advanced age in the face of the disruptions in identity in front of ageing and retirement.

**Keywords:** Identity consistency, SOC, transitional period of ageing and retirement,

**INTRODUCTION**

**Autobiographical memory**

Autobiographical memories, as the content of the self (Conway & Williams, 2008) and our wellbeing are closely related (Fivush, 2011). Episodic memory was regarded as more close to the self (Tulving, 2002), however recent studies pinpoint the important role of semantic knowledge in autobiographical memory (AM). Key is the finding of Rathbone, Holmes, Murphy & Ellis (2015) that the emotional valence of semantic self-images, not the valence of the episodic memories was strongly correlated with wellbeing in younger and adults of advanced age. This study was
designed to explore how wellbeing and two types of Autobiographical Memory semantic self-images and episodic autobiographical memories are related. As ageing is associated with changes in memory function (Piolino et al, 2002. Piolino, Desgranges, Clarys, Guillery-Girard, Taconnat & Isingrini, 2006; Irish, Lawlor, O’Mara, & Coen, 2011; Holland, Ridout, Walford, & Geraghty, 2012) we compared a group of middle-aged adults to a group of adults of advanced age to examine how these two age groups differ in these relationships. AM confers a special ability to mentally represent ourself in the events we remember, as an existence with continuity between the past, the present and the future and connect these event representations in sequences that create a meaning and define our self and our life (Habermas & Bluck, 2000. Higher levels of wellbeing increase the possibilities of a satisfied, healthy and fulfilling life (Kanksy & Diener, 2017) and decrease the development of mental health problems (Kanksy Allen & Diener, 2016). Exploration of semantic and episodic components in wellbeing seems to be of major importance, taking into account that longevity and higher levels of physical health are among the long term benefits of achieving a wellbeing (Liu & Waite, 2014).

The SMS Model

Conway and Pleydell-Pearce (2000) developed an organizational account for AM. Since then, this model is the most influential in the AM literature. The revised form of the model (Conway, Singer, & Tagini 2004) will be presented. According to this model, autobiographical knowledge is hierarchically organized in levels of specificity, ranging from the more abstracted to the less abstracted information. In the top level of the hierarchy, it’s the life story (our life as it is formulated by social
influences like culture), in the next level it is life time period (broad units of knowledge of a whole period) and the general events (repeated events or single repeated events that are closer to the experience we remember). In a distinct level, in the episodic system, event-specific knowledge is contained. Of core importance is the long-term knowledge of the self, organized in the structure of the long-term self that is modulated by our autobiographical knowledge base and the self as it is conceived in the present. Both the long-term components of AM and the more stable are in constant interaction, that is driven by the current goals of the self (working self).

Inside the Working Self is the Conceptual Self that contains beliefs, evaluations, currently active self-images of a self with continuity between the past and the future. The main purpose of this interaction is the reservation of long-term coherence of the self. It is the current goals of the self that control if a trace of an event-specific knowledge will be encoded and incorporated in the autobiographical base and thus an autobiographical memory will be formed (Conway, 2000, 2004). In this conceptualization, AM is the knowledge base of the self and is highly conceived by the models’ function. Memory traces that finally are encoded and incorporated, connect the past for a positive psychological present and long-term continuity, only when AM structures are in concordance (Conway et al, 2004, Conway, 2005).

**Episodic and semantic autobiographical memory**

For a long period of time, AM was considered to have prominently an episodic quality (Piolino, Desgranges & Eustache, 2009). Although, at this moment it is well established that AM includes both semantic and episodic-specific components (Tulving, 1972). AM is characterized as episodic when memories recollected are vivid, contain sensory-perceptual details, emotions, thoughts and are situated in a specific spatial and temporal context (Levine, 2002; Tulving, 2002). In episodic
recollection of AM there is a mental time travel of the rememberer from present to past via autonoetic consciousness (Wheeler, Stuss & Tulving, 1997). On the other hand, AM is semantic when the rememberer recollects personal facts, traits or general self-knowledge and cannot define time and place or relive the event (Tulving, 1985).

**Semantic Self-Images**

Self-images are personal statements about roles, traits, personal interests or emotional attitudes (Rathbone & Moulin, 2017) that give the capability to people express their multiple aspects of their identity (Markus, 1977). They are knowledge structures, of semantic nature about the self (Rathbone, Holmes, Murphy & Ellis, 2015) that represent interconnected autobiographical semantic knowledge and episodic that together define and support a specific view of the self (Conway & Williams, 2008). Chessel, Rathbone, Souchay, Charlesworth & Moulin (2014) mention that semantic self-images or otherwise called specific identities is the reference point of episodic autobiographical memories that ground this aspect of the self.

**Functions of specific-episodic memories**

Specific episodic memories are linked with different functions, such as establishing or empowering social bonds (Davidson, Drouin, Kwan, Moscovitch & Rosenbaum, 2012), enabling an individual to regulate better the present by taking better decisions (Klein, Robertson & Delton, 2010) and the future by simulating distant events or schemas that contain the self (Hassabis, Kumaran & Maguire, 2007). Furthermore, episodic memories are suggested to be close to dimensions of the self. It has been
noted that they give the capability of a better conceptualization of ourselves through events reconstruction that illuminate essential aspects of the self (Conway, 2005), while it has been proposed to contribute to future wellbeing through their instructive function (Pillemer, 2003).

**The emerging role of semantic AM in AM research**

Episodic-Specific memories have been on the center of AM research (Waters, Bauer & Fivush, 2014). In recent years, researchers began to get interested and study more extensively the role of semantic AM. In the following section older and current findings on semantic AM will be reported. It has been suggested that in the face of age-related episodic difficulties, healthy adults of advanced age can use their personal semantic memory in order to retain their sense of identity and continuity (Piolino et al 2006) Thomsen (2009) under the hypothesis that semantic structures of AM can play a more discrete role than mentioned before in the life story organization, showed that in essence life stories are constructed prominently by semantischised extended structures, called chapters. Chapters can better summarize and organize an individuals’ life story and confer consistence in the narrartive life story. Narrative life story is a conceptualization of identity that integrates elements of the self in a synchronic and diachronic unity (Mc Adams, 1985). Prebble, Addis, & Tippett (2013) agreed with Thomsen (2009) that is semantic memory that narrative continuity can be promoted and added that healthy adults of advanced age enhance their self-continuity via preserved semantic forms of memory. Furthermore, Haslam, Jetten, Haslam, Pugliese & Tonks, 2011) highlighted the role of semantic self-knowledge, suggesting that integrity of identity in adults of advanced age is a result of semantic
self-knowledge as he found that weaker identity strength comes of poor semantic self-knowledge. He explains that episodic self-knowledge, in not useless for identity but contributes to identity because it is the basis for this semantic self-knowledge. The importance of semantic AM to identity has been found also by a group comparison study between amnesiacs adults and control adults. Grilli & Vefaellie (2015) showed that both groups supported their-self conceptions predominantly with semantic memory and in that way grounded their selves, while in another study Grilli (2017) showed that young adults supported identity representations by retrieving semantic types of memory rather than episodic. Semanticised forms of AM are found to be more closely related to concepts of the self rather than episodic-specific memories. Rathbone, Holmes, Murphy & Ellis (2015) found that the emotional tone of semantic self-images predicts better individuals’ wellbeing than the emotional tone of specific memories. The emotional tone of chapters has been found to be more closely related to personality traits and self-esteem than the emotional tone of specific memories (Thomsen & Pillemer, 2016), while more recently, Steiner, Thomsen & Pillemer (2017) discovered that the emotional valence of life story chapters is more strongly correlated with trait self-continuity and self-esteem than the emotional valence of episodic autobiographical memories. In addition, there is evidence that having more positive past chapters are related to higher subjective wellbeing (Thomsen, Lind, & Pillemer, 2017), while writing about chapters in the life stories can increase self-esteem (Steiner, Pillemer, & Thomsen, 2019).

The sustainability of semantic AM

Semantic autobiographical knowledge is better maintained relative to episodic autobiographical memories in healthy adults of advanced age (Piolino, Martinelli,
Differences of age groups in dimensions of episodic AM

According to the positivity effect, aging is associated with a tension to focus more on the positive elements of memory (Reed & Carstensen, 2012) and rate more positively past autobiographical memories (Gallo, Korthauer, McDonough, Teshale, & Johnson, 2011; Tomaszczyk & Fernandes, 2012). This effect has been found even for hypothetical autobiographical events (Schryer & Ross, 2014) or highly negative autobiographical events (Ford, DiBiase, Ryu, & Kensinger, 2018) relative to younger adults. Empirical findings from studies in AM using broad age ranges, report that as people are ageing tend to decline in episodic AM (Piolino et al., 2002, Piolino, Desgranges, Clarys, Guillery-Girard, Taconnat & Isingrini, 2006; Irish, Lawlor, O’Mara, & Coen, 2011; Holland, Ridout, Walford, & Geraghty, 2012). Most of the studies indicating a reduction in episodicity in personal past events compare young to old cohorts. To our knowledge just two studies compared healthy middle-aged and healthy adults of advanced age (Howes & Katz, 1992; Berna, Schönknecht, Seidl,
Toro, & Schröder, 2012), with that of Howes and Katz fitting exactly to the age range we are examining in this study and found no significant differences between the two age groups in producing episodic specific autobiographical memories. As fas as concerns the age of episodic memories, it has been proven that adults of advanced age no matter the cuing method recall episodic autobiographical memories from longer ago than younger adults (Spreng & Levine, 2006, Chessell, Rathbone, Souchay, Charlesworth & Moulin, 2014; Rathbone et al., 2015). Despite findings discovering a reduction in episodicity, there are findings depicting an increasement with age in rating of phenomenal aspects of autobiographical memories such as vividness (Rubin & Schulkind, 1997; Complain, D’Argembeau and Van der Linden, 2005; Rubin & Berntsen, 2009; Janssen, Rubin & Jacques, 2011) as well as when it comes for autobiographical memories with a meaning for the self, increasement with age in coherence, sensor details, time clarity and a field perspective have been reported (Siedelski, Hicks & Komhauser, 2015). In same line enhanced phenomenology has been found in middle-aged and adults of advanced age (from 40 to 75 years old) compared to younger adults (Gardner, Mainetti, and Ascoli, 2015) in case of details they remembered from specified categories, e.g., temporal detail, spatial detail, persons, objects, and emotions. Finally, this effect has been replicated when middle-aged and adults of advanced age (from 40 to over 60 years old) reported higher phenomenology when recalling Turning points mostly but also an early childhood memory compared to the younger participants (Luchetti & Sutin, 2018). It has been proposed that in autobiographical memories that are highly emotional, loss of episodic details is weakened (Complain, D’Argembeau and Van der Linden, 2005). It may be the increased frequency of rehearsal and sharing of memories in adults of advanced age that strengthens their phenomenology (Alea & Vick, 2010) or it is a tension of
adults of advanced age to rate higher qualities of autobiographical memories (Janssen, Rubim, & Jacques, 2011). Cohen & Faulkner (1988) found that middle-aged and adults of advanced age rated their episodic autobiographical memories as more important than younger adults. It has been pinpointed that there is a need for more objective measures to examine the specific details of autobiographical memories in order to overcome the subjectivity in ratings by different age groups. (Galo, Korthauer, McDonough, Teshale & Johnson, 2011).

Differences of age groups in dimensions of semantic AM

A stable conceptual-self is arising between late teens and early twenties. Conway, 2005; Conway & Holmes, 2004. The highest development of sense of identity arises after high school, during the college years, while a consolidation process in self-identity follows immediately after (Waterman, 1982). There is data showing that self-images for middle-aged and adults of advanced age are emerging between adolescence and early adulthood (Rathbone, Moulin & Conway, 2008).

Findings about how the emotional valence and the importance of semantic self-images differentiates with age are limited. Rathbone, Holmes, Murphy & Ellis (2015) by comparing young to adults of advanced age argued that the positivity effect may not exist in semantic self-images, while no difference was found in the rating of semantic self-images’ importance. Identity assimilation and identity accommodation are two processes in the Identity Process Theory that the one promotes self-consistency and the other changing of identity respectively (Sneed & Whitbourne, 2001). Previous studies have shown that as people are ageing in the face of age-related changes, keeping their self-identity consistent becomes extremely important.
Self-images, episodic memories and wellbeing

Empirical findings show that a consistent and stable self-concept is important for adjustment and wellbeing (Church, Anderson-Harumi, del Prado, Curtis, Tanaka-Matsumi, Valdez-Medina, Mastor, White, Miramontes, & Katigbak, 2008). Contextualized self-representations’ unity and consistency have been found to be linked with beneficial outcomes for the self, such as life satisfaction or self-esteem, whereas a fragmented concept is linked with maladjustment outcomes, such as anxiety and depression (Bleidom & Ködding, 2013). Thus, self-images, as mental representations of identities of the self can be linked to wellbeing. Restoration of positive self-images through social comparison, can be a source of self-stability in people of advanced age (Diehl et Hay, 2007), in their increasing need to develop themselves and retain a positive self-concept (Cheng, Fung & Chan, 2007). The emotional valence of semantic self-images has been found to be more closely related to wellbeing than the valence of episodic autobiographical memories, particularly in the group of adults of advanced age (Rathbone et al, 2015). Research indicates that autobiographical memories contribute to an individual’s wellbeing and adjustment, when they represent intrinsic values (Lekes, Guilbault, Philippe & Houle, 2014; Bauer & Mc Adams, 2004; Philippe, Koestner, Beaulieu-Pelletier, Lecours & Lekes, 2012) and in that way fulfil our basic psychological needs (Lekes, Guilbault, Philippe & Houle, 2014).
Wellbeing

Wellbeing is divided broadly into two perspectives, eudemonic and hedonic wellbeing (Ryan & Deci, 2001) or otherwise called psychological wellbeing (Ryff, 1989). Eudemonic well-being is tied in with our concern to have a purposeful and meaningful life, create successful social relationships, feel powerful (Diener, 2017), autonomous and personally developed (Delle Fave, Bassi, Boccaletti, Roncaglione, Bernadelli & Mari, 2018). Waterman (2011) points the intrinsic nature of eudemonic wellbeing, by indicating it occurs in our route to self-realizate and self-motivate. On the other hand, hedonic wellbeing seems to be more present oriented than eudemonic, as it is linked to the “here and now” accomplishment and maximization of satisfaction and desire, carefreeness and enjoyment (Diener & Ryan, 2009). Indeed, eudemonic and hedonic wellbeing are complementary and are needed both for a wellbeing (Huta, 2015). This complementary function is captured in Seligman’s model of wellbeing (Flourish model), named PERMA (by the acronyms of Positive Emotions, Engagement, Relationships, Meaning and Accomplishment) that integrates both variables of eudemonic and hedonic wellbeing (Selligman, 2011). Seligman (2010) states that “PERMA” includes the elements of wellbeing, exemplifying that it is not a new kind of wellbeing.

Differences of age groups in wellbeing

A clear trend between wellbeing and age is difficult to be concluded. The majority of the research affords the relationship between the hedonic dimension of wellbeing and age, identifies controversial findings: predominantly a u-shape association has
been reported with a minimum wellbeing in midlife and an increase in wellbeing in later life (Clark, 2007; Blanchflower & Oswald, 2008; McAdams, Lucas & Donnellan, 2012; Van Landegham, 2012; Cheng, Powdthavee, & Oswald, 2015), an inverted u-shape association where individuals feel the highest levels of life satisfaction around the age of 65 and one year before death, life satisfaction is decreased (Mroczek & Spiro, 2005) or it is proposed that middle-aged have the highest levels of happiness, that progressively increase till the age of 51 and then happiness is decreasing (Easterlin, 2006). Finally, according to the linear association that has been discovered, the relationship between wellbeing and age is thought to have no fluctuations through life (Costa, Zonderman, McCrae, Cormoni-Huntley, Locke & Barbano, 1987; Myers & Diener, 1995) or decline with age (Deaton, 2008). As what occurs the eudemonic dimension of wellbeing empirical evidence suggests that although adults of advanced age report the highest levels of life satisfaction, an existential crisis occurs as they express the lowest levels of purpose in life and growth compared to young and middle-aged adults (Ryff, 1989; Springer, Pudrovská & Hauser, 2011; Mackenzie, 2018).

**Aims and hypothesis of the study**

Based on the theoretical background, the first aim of this study aims to illuminate the possible discriminations of the ratings in the dimensions examined of semantic self-images and episodic autobiographical memories in the two age groups. Do they differ? If so, what are the dimensions of episodic autobiographical memories and semantic self-images they do differ? (Research question A)
The second aim is to explore how the emotional valence of semantic self-images and episodic autobiographical memories is related with wellbeing by comparing middle-aged adults to adults of advanced age, in order to shed light on the role that the two components of AM play in wellbeing. The hypothesis was formulated as follows:

the emotional valence of semantic self-images, would be more closely correlated with the wellbeing measure in both age groups compared to the emotional valence of episodic autobiographical memories. (Hypothesis B)

MATERIALS AND METHODS

Design and Participants

This study has a design of two age groups comparison. The sample in the proposed study comprised of two groups of individuals (N= 65) : a group of middle-aged adults and a group of adults of advanced age matched for gender, \( x^2(1) = 5.015, p >.05 \) (see Table 1) and educational level, \( F (1,63) = 3.503, p >.05 \). All participants had at least 12 years of education and Hellenic as their native language. The group of middle-aged adults consisted of 32 participants 40 to 50 years old \( (n=32, 16 \text{ men (50%)}, \text{Mean age } = 45.125, SD = 3.07) \) and 12 to 16 years of schooling. The group of adults of advanced age consisted of 33 participants 60 to 70 years old \( (n = 33, 17 \text{ men (51.5%)}, \text{Mean age } = 63.84, SD = 2.501) \) and 12 to 16 years old of schooling . All of our participants were volunteers from the dwelling community and should be cognitively healthy. Exclusion criteria for both groups were a history of neurological conditions or psychiatric. Each participant was assessed for his general cognitive status with the Montreal Cognitive Assessment (MoCA) and to be included in the sample a minimum
of 26 point score was a prerequisite. Furthermore, potential participants in both groups were screened for depressive symptomatology via the Hamilton Depression Rating Scale (Ham-D) and persons with scores > 17 were excluded from the study. As regards the ability for verbal fluency, the subscales of letter fluency and category from the Delis – Kaplan Executive Function System were administered.

**Measures**

**Autobiographical Memory Interview**

Participants semantic and episodic autobiographical memory was assessed with the Autobiographical Memory Interview, a semi-structured interview (AMI, Kopelman, Wilson & Baddeley, 1989). AMI examines the semantic components of autobiographical memory via the “personal semantic” schedule, where subjects should recall facts from their childhood, early adult life and recent life and episodic components are examined via the “autobiographical incidents schedule”, where subjects should recall specific incidents for each period respectively (Kopelman, Wilson & Baddeley, 1989).

For example participants are asked to remember semantic facts such as their address in the period life before going to school and 3 names of friends or neighbors’ of the same period. After answering the semantic section about the period before school, they are asked to recall an episodic incident from that period: “Can you now remember an incident from the period before going to school?” This process is repeated for periods across life of participants’. Scores for every semantic and episodic section are given after compared to the range of scores expected in the healthy population (using the AMI manual). Each episodic incident is assessed about
its’ episodic specificity following the qualitative 0-3 scale used in Kopelman et al. (1990). Using this scale, a response based on semantic memory or no response is rated 0, a vague personal memory is rated 1, a moderately specific event (personal but non-specific or specific without time and place detail) is rated 2, and an episodic memory specific in time and place is rated 3. Every episodic memory produced was scored by comparing the participants responses with the scoring procedure examples that are presented in the manual. Scoring has been undertaken immediately after the interview as it is proposed in the manual. Every episodic memory produced was rated for specificity by two raters in order to have a measure as more precise as possible. In this way a total score summary has been taken for personal semantic and for episodic autobiographical memories across participants life.

I AM TASK

I Am Task was administered to every participant (Rathbone, Moylin & Conway, 2008). Following the I AM version is proposed in Rathbone, Conway and Moulin, (2011), participants were asked to generate up to 3 “I AM” statements as cues for up to three episodic autobiographical memories per statement. It has to be mentioned that semantic self-images generation task was completed first, in order participants not prime particular aspects effects as Rathbone et al, 2015 suggested. “I AM” statements should reflect core aspects of participants sense of identity. These statements could be roles, personality traits or anything that the participant felt it is something defining of his sense of identity in some way. For example participants could state for themselves: “I am a mother”, “I am an kind and hardworking person” or “I enjoy
learning new things via people, trips or books”. Afterwards, participants answer
questions about this statement such as how negatively or positively they feel about it,
how much important this statement is for them and in what age this knowledge
became a real part of themselves. For every statement, participants have to recall
memories that this part of themselves was extremely present from whatever period of
life, as more precise as they can and lasting minutes or hours but no longer than a day.
The I AM version presented in the study of Rathbone, Moulin and Conway (2011)
presupposes the generation of 5 episodic autobiographical memories. We started to
administer I AM Task, asking for 5 episodic memories being generated by the
participants. We identified that the sample of advanced age presented fatigue with the
generation of 5 memories. In order to avoid this effect, it has been decided to reduce
the number of episodic memories. Thus, all participants finally produced 3 episodic
autobiographical memories for each semantic self-image. Based on Rathbone, 2015
participants should point the age at event they recalled, rate on an 11-point scale for
vividness (0 = not at all vivid, 10 = very vivid), emotional valence (1 very negative, +5
= very positive), personal significance (0 = not at all personally significant, 10 = very
personally significant), rehearsal (0 = never think about it, 10 = think about it all the
time) and on a dichotomous scale for imagery perspective (observer or field) for each
episodic autobiographical memory. Episodic specificity of memories was rated in two
ways. First, participants were provided with standardized Remember / Know / Guess
instructions (Gardiner, 1988) and should rate whether each memory was something
they remembered (R), knew (K) or guessed (G). The rated as R (Remembered)
memories were scrutinized for episodic details, and were rated as Justified
Remembered (JR) if details about the content, place and time were provided
(following Piolino et al., 2003). Secondly, specificity of the memories was assessed
by the researcher and a second rater using a 0 to 4 scale (Baddeley & Wilson, 1986), in which 4 = specific event with details and situated in time and space, 3 = a specific event without any detail but situated in time and space, 2 = a repeated or extended event situated in time and space, 1 = a repeated or extended event not situated in time and space, and 0 = no memory given / only general information about the topic.

Participants rated each if the three self-statements (“I AM Statement = semantic self-images) for emotional valence in (1 = very negative, +5 = very positive), age of identity formation and personal importance (0 = not at all important, 10 = very important. It has to be pinpointed that the rating scale for the emotional valence of semantic self-images and episodic autobiographical memories was collapsed in a 1 to 5 scale, as it was approved that participants found it difficult to define the emotional valence in 0 to 10 scale. Thus, the emotional valence scores for semantic self-images and episodic autobiographical memories were based on similar participants’ reported rating scales.

The PERMA-Profiler

The PERMA-Profiler (Seligman, 2011; Greek version: Symenonidou, Moraitou, Pezirkianidis & Stalikas, 2018) is a measure of a person’s wellbeing and integrates both variables of hedonic and eudemonic wellbeing (Seligman, 2011). Specifically, the term ‘PERMA’ represents the pillars of positive emotions, engagement, relationships, meaning, and accomplishment (measured by three items each). These pillars together conduce to a person’s sense of wellbeing. An overall wellbeing score can be computed as the mean of the five subscales total scores and a single item.
tapping Overall Happiness. Moreover, seven items measuring health, negative emotions, and loneliness are also included in the questionnaire giving complementary information about other wellbeing indices. Hence, the measure consists in total of 23 items scored on an 11-point Likert-type scale anchored by ‘0 = never’ to ‘10 = always’ or ‘0 = not at all’ to ‘10 = completely’. For example, participants answer questions such as “In general to what extent do you lead a purposeful and meaningful life?”, “How lonely you feel in your daily life?” etc.

The factorial structure of the PERMA-Profiler scale has been confirmed in a Greek and was found to consist of five factors, corresponding to the original structure. Cronbach’s alphas for each factor, as calculated for the original instrument and the Greek version, respectively, were as follows: for Positive affect: $\alpha = .88$ and $\alpha = .85$, for Engagement: $\alpha = .72$ and $\alpha = .57$, Relationships: $\alpha = .82$ and $\alpha = .75$, Meaning: $\alpha = .90$ and $\alpha = .78$, and Accomplishment: $\alpha = .79$ and $\alpha = .73$. Also, both in the original study and the validation study in Greece, the measure demonstrated acceptable cross-time stability, and evidence for convergent and divergent validity. However, the findings of both studies suggest that researchers should interpret the results concerning the Engagement subscale with caution, since it demonstrates marginal to unacceptable Cronbach’s alpha and Spearman-Brown values of internal consistency ranging from .53 to .81 for the construction sample and between .40 and .73 for the Greek sample. The Cronbach’s alphas for each factor in the present study were: for Positive Affect, $\alpha = .85$, Engagement, $\alpha = .27$, Relationships, $\alpha = .79$, Meaning, $\alpha = .76$, and Accomplishment, $\alpha = .63$.

Procedure
For all participants the procedure started with the administration of the Hamilton Rating Scale of Depression (HAM-D; Hamilton, 1960) and the Montreal Cognitive Assessment (MoCA; Nasreddine, 2005) that has been validated in Greece (Lyracos, 2014; Poptsi, E., Moraitou, Eleftheriou, Kounti-Zafeiropoulou, Papasozomenou, Agogiatou, Bakoglidon, Batsila, Liapi, Markou, Nikolaidou, Ouzouni, Soumporou, Vasiloglou, & Tsolaki, 2019). The Hamilton Depression Rating Scale (HAM-D) 17 items is a widely used rating scale to assess the severity of depression. The total score of the 17 items (range 0-52) reflects the severity of depression. The scores on the individual items reflect the severity of individual symptoms (Hamilton, 1960). The Montreal Cognitive Assessment has been developed as a brief cognitive screening tool for mild-moderate cognitive impairment and has been found to have high sensitivity and specificity for the detection of mild cognitive impairment (Nasreddine, 2005; Aggarwal, 2010). MoCA assess several cognitive domains including executive function, visuospatial function, attention and concentration, memory, language, calculation and orientation (Nasreddine, 2005). Only if participants met the strict inclusion criteria (MOCA cut off score ≥ 26 points, Ham-D cut off score ≤ 17 points) were continuing with the procedure. In order to ensure the verbal functioning, the subscales of letter fluency and category of D-Kefs (Delis, Kaplan, & Kramer, 2001) were administered next. In the standard versions of the tasks, participants are given 1 min to produce as many unique words as possible within a semantic category (category fluency) or starting with a given letter (letter fluency). The number of unique correct words is the participant's score. A satisfactory condition of the advanced age group autobiographical memory was considered essential before the I-AM Task administration and the Autobiographical Memory Interview (AMI) was used as the autobiographical memory’s assessment measure.
Only if participants of advanced age succeeded adequate scores, were proceeded for the I-AM Task. The middle-aged group in one session lasting between 1,5 to 2 hours completed the full procedure: the screening neuropsychological measures, and the main instruments, I-AM Task and PERMA-Profiler. A 10’ break was given to the participants between the screening measures and the 2 main measures. The advanced age group completed the full procedure in two sessions: one session lasting 1,5 to 2 hours for the screening measures and the AMI. A break of 15’ was given after the screening tests. A second session lasting 1,5 to 2 hours took place within one week, where I-AM Task and PERMA-Profiler were administered. Sessions took place in the morning, in a quiet and sunny office, while it has been ensured that all of participants had an adequate sleep the previous day.

**Ethics Statement**

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All participants participated voluntarily in the study. They were informed about the procedure and the aim of the study, and subsequently they provided their written consent for participation.

**3. Results**

The first aim of this study was to examine if the ratings in dimensions of semantic self-images and episodic autobiographical memories differed between middle-aged
and adults of advanced age. The data was analyzed using the SPSS v.25. The application of MANOVA with age group as the independent variable (two levels: middle-aged and adults of advanced age) and the three measures ratings of semantic self-images as the dependent variables showed that age group has a significant effect, $F (3,59) = 3.609, p = .05, \eta^2p = .15$ (see Table 1). A series of subsequent one-way ANOVAs, after the Bonferroni correction in the level of statistical significance at $\alpha = 0.05 / 3 = 0.016$ showed that the two groups differed significantly only in the rating of self-images’ importance, $F (1, 61) = 7.252, p = .001, \eta^2p = .106$. Semantic self-images produced by the older group has been found to be regarded as more important for them (M.A = 28.562) than the middle-aged (M.A = 26.967).

As regards the effect of age group on the phenomenological ratings of episodic autobiographical memories, the application of MANOVA with age group as the independent variable and the ten phenomenological ratings of episodic autobiographical memories as the dependent variables showed that age group has a significant effect, $F (52,10) = 5.14, p = .05, \eta^2p = .497$ (see Table 2). After the correction of Bonferroni in the statistical level of significance at $\alpha = .05 /10 = .005$, a series of subsequent ANOVAs showed that age group has a significant effect only in the age of episodic autobiographical memories formation, $F (1,61) = 32.99, p = .005, \eta^2p = .35$, with the adults of advanced age giving a bigger age (M.A = 346.609 / 9 = 38.5) of episodic autobiographical memories creation than the middle-aged (M.A = 262.532 / 9 = 29.17).

Before moving to the second main aim of the study, it was necessary to explore the effect of age group on wellbeing scores. An ANOVA with age group as the independent variable and Perma score as the dependent variable revealed that age has no significant effect in wellbeing, $F (1, 63) = 1.98, p > .05, \eta^2p = 0.30$.
The second aim of the study was to investigate the relationships between the emotional valence of semantic self-images and episodic autobiographical memories and participants’ wellbeing score. In order to investigate these relationships, we calculated semantic self-images valence scores (semantic feel) using participants’ mean emotional valence ratings for all self-images generated in the I AM Task and episodic autobiographical memories valence scores (episodic feeling) using participants’ mean emotional valence ratings for all episodic memories generated in the I AM Task. To gain insight how these relationships might differ between the two age groups, we ranned correlational analysis in each age group separately. In the middle-aged group correlational analyses showed that wellbeing score (Perma total) has a moderate but significant correlation \((r = .416, p = .05)\) with emotional valence of semantic self-images (semantic feel). In the group of adults of advanced age a moderate significant correlation \((r = .489**, p = .01)\) has been found between wellbeing score and emotional valence of semantic self-images and a moderate significant correlation too \((r = .437*, p = .05)\) between wellbeing score and emotional valence of episodic autobiographical memories (Hypothesis B)

**DISCUSSION**

The first aim of this study was to examine whether the ratings in dimensions of semantic self-images and episodic autobiographical memories differed between the middle-aged group and the group of adults of advanced age. Concerning the ratings in dimensions of semantic self-images, results have shown that age group has a significant effect only in the rating of semantic self-images’ importance: the group of
adults of advanced age has been found to regard their self-images as more important than the middle-aged group. Participants were instructed to report their three most important self-statements as cues for three episodic autobiographical memories. Nevertheless, as results have shown the adults of advanced age still rated their self-images as more important for them than the middle-aged. This is a finding that can offer much valuable information. The group of advanced age of the study were in front of ageing and most of them of retirement and specifically in the initial stages of these transitional periods of life. In the face of the ageing process, adults are challenged by physical and psychological declines (Whitbourne & Sneed, 2002). Retirement can be a challenging period for the self too as many changes co-occur. It may be the loss of the usual life structure, that children may leaving home at the same time (Osborne, 2012) and as retirement and ageing overlap, existential issues may appear. Especially, retirees for whom their professional role, was their prominent role in life can provoke an identity crisis (Osbourne, 2009). In contrast the age group of the middle-aged adults are in a stage where the largest number of social roles are held and the heaviest role responsibilities are keepen (Lachman, 2000). The group of adults of advanced age may be in the interface of the challenge of abandoning past roles and having to adjust in new roles coming up by the transitions of retirement and ageism. That means their self-continuity may have been menaced. As SOC posits, the sample of advanced age may select new information and experiences in the outset of retirement and ageism, optimize their former self-knowledge and in this way compensate the possible losses of their identity and indeed their wellbeing (Baltes, 1997). Moreover, it has been found that self-identity consistency is of major importance, when adults of advanced age are in front of losses of ageing (Whitbourne, Sneed & Skultety, 2002) and that’s why they prefer identity assimilation than identity
accommodation (Whitbourne & Collins, 1998). In their struggling for self-identity consistency, adults of advanced age may cling on self-images and rate them as more important compared to the middle-aged group. Thus, our findings can be interpreted and supported under the process of identity assimilation of the Identity Process Theory and the theoretical background of SOC. An alternative explanation could be that as adults of advanced age had more experiences to remember as well as more chances to ensure that the semantic knowledge they feel and report about themselves is corresponding with more accuracy to the real knowledge of themselves, they may assess this knowledge as more significant at the moment of the study. In contrast, the middle-aged group, if we take into account the younger of their age may perceive their self-images as more fluid and susceptible to future modifications, so they assess them as less important for them at the moment of the study.

As concerns the ratings in dimensions of episodic autobiographical memories between the middle-aged group and the group of advanced age, results have shown that there were no significant differences in most episodic measures, except for the age of episodic autobiographical memories creation. Even if our study compares younger and adults of advanced age, it might be that they are too close in age years and age effects in most episodic measures were not significant. The middle-aged sample recalled autobiographical memories that happened 15.95 years ago from their mean age, while the sample of advanced age events 25.34 years ago from their mean age. It seems to be a consistent finding that adults of advanced age recall episodic autobiographical memories from longer ago than younger adults (Spreng & Levine, 2006, Chessell, Rathbone, Souchay, Charlesworth & Moulin, 2014; Rathbone, Holmes, Murphy & Ellis, 2015). Age group did not have as mentioned a significant difference in age of semantic self-images’ formation. It is established that it is
between teens and early twenties that a stable and enduring conceptual-self and self-image emerges (Conway, 2005; Conway & Holmes, 2004; Rathbone, Moulin & Conway, 2008). The fact that semantic self-images emerged in a similar age, their early twenties, while age of associated episodic autobiographical memories differed significantly between middle-aged and adults of advanced age is a critical finding. An investigation in all participants responses both in self-images and episodic autobiographical memories was considered essential to approach an adequate answer for this finding. Responses of our participants in the I Am task indicate that self-images do emerge in a similar age both in middle-aged and adults of advanced age, but on the basis of their different age and stage of life, developmental tasks are differentiated and inevitably the mean age of episodic autobiographical memories differ. Parenthood has suggested to be defining across the lifespan of adults and the occupational role among the most frequently reported semantic self-images (Rathbone & Moulin, 2017). Participants in our sample defined themselves most via parenting roles, occupational roles and traits. The significant difference that has been found in age of episodic autobiographical memories’ seems to be resulted because the sample of advanced age may reported self-images that may emerged in a younger age (e.g., I am a mother, I am a father, I am hard working, I am a fair person, I am a frank person etc.) but most episodic autobiographical memories are recalled from later years of their adult life. It has been observed that the sample of advanced age when recalled episodic autobiographical events specifically for the parenting role, inferred in themes such as successes, problems, graduation, marriage, birth of grandchildren from their children adolescence or adult life, while the younger sample recalled themes of parenthood happening in their children childhood. Most participants of the sample of advanced age were retirees, while a minority still held their occupation. In both cases
the sample of advanced age seemed to define themselves either with the profession they held, traits that indicated a hard-working and productive person or traits that were formulated and affected by the profession they held. There are findings that indicate that even if adults get distance from job after retirement, they still associate themselves with the work identity and in that way inform the current identity (Bullock, 2015). Also, they have been found not to substitute their identity with a “retiree identity” and not have a lot of changes in their personal identities (Teuscher, 2003). This continuity in their semantic self-images can be assumed by our participants of advanced age. Just as the younger group they produced self-images most about their parenting role, their profession or were affected by their professional identity. Another important observation is that younger adults episodic autobiographical memories associated with self-images about parenting roles were more centered around rearing and helping their children, for those who were married and had kids or centered around themselves, whereas older participants’ autobiographical memories were more centered around offering or helping their children too but also helping others, offering to community, by participating in social groups. This is an observation that can be explained under the framework of generativity in later life in Eriksons’ model of adult development (Erikson, 1950). Previous findings suggest that societal generativity is presented after mid-life, whilst middle-aged adults are in the stage of parenthood generativity (Snarey, 1993). It can be assumed that middle-aged adults of our sample have not entered the stage of societal generativity, our older sample is already in it.

Semantic autobiographical memory has started to receive more attention in recent years in autobiographical memory research. A numerous number of studies, mentioned before in the introduction section, indicate that semantic memory is close
to the self by supporting identity and by enhancing continuity. The fact that semantic AM can be more self-relevant than episodic AM can be based also in findings that prove the closer relatedness of semanticised forms of AM to concepts of the self rather than episodic AM. Rathbone et al (2015) found that the emotional tone of semantic self-images was more predictive of participants’ wellbeing than the emotional tone of episodic autobiographical memories. In same line, the emotional tone of life story chapters has been found to be more closely related with personality traits than the emotional tone of episodic specific autobiographical memories (Thomsen & Pillemer, 2016). Further evidence comes from Steiner, Thomsen & Pillemer (2017) who showed that chapters, semanticised forms of AM were regarded by the participants as more self-understanding, more central to identity than episodic AM, while positive chapters were more predictive of enduring self-continuity and high self-esteem than episodic autobiographical memories. In another research about chapters, Steiner, Thomsen & Pillemer (2018) found evidence that when people write about chapters in life stories, self-esteem can be increased and suggested that chapters in life stories may have a function of constructing a positive identity.

The second hypothesis of our study (Hypothesis B) has partially been confirmed. We have clear evidence that the emotional valence of semantic self-images of middle-aged is closer related to their wellbeing, while in the group of adults of advanced age both the emotional valence of episodic autobiographical memories and semantic self-images are equally linked to their wellbeing. Our findings contribute to previous research by indicating a closer relationship of semantic AM to conceptions of the self in the group of middle-aged, while in same line semantic self-images have been proven to have a significant relation with wellbeing in the advanced age group too. The fact that exclusively in the advanced age group, the emotional valence of episodic
memories is related with the measure of wellbeing, agrees with findings indicating that in older adults particularly, episodic autobiographical memories are not useless for the self and are still important as memories with meaning about life that contribute to a sense of continuity and overall wellbeing (Prebble, Addis, & Tippett, 2013; Habermas & Köber, 2015). Episodic autobiographical memories have been shown to contribute to adults wellbeing when representing intrinsic values and fulfil basic psychological needs (Lekes et al, 2014). Although, in the present study in order to explore the relation between memory and wellbeing, emotional valence ratings of episodic autobiographical memories were used to better compare semantic self-images and episodic autobiographical memories following Rathbone et al, 2015.

Mental representations of semantic self-images include the term “image” as are often experienced as images (Conway, 2005). Images have been found to evoke strong emotion through mental imagery. Specifically, positive valenced mental imagery can increase positive affect (Nelis, Holmes, Palmieri, Bellelli, & Raess, 2015), can promote optimism and wellbeing in long term (Blackwell, Browning, Mathews, Pictet, Welch, Davies, & Holmes, 2013). Kaplan, Epstein, & Sullivan Smith, 2014 argue that our imagination is in dynamic interaction with our wellbeing. In this study we have evidence that the way middle-aged and adults of advanced age feel about their semantic self-images is in close relationship with their interpretations of their wellbeing. Nevertheless, the way that semantic self-images affect wellbeing is not explicit. This effect was pronounced in middle-aged group and to our knowledge has not been mentioned before. It’s of particular interest the finding that wellbeing of middle-aged adults’ despite been found to be significantly related only with the emotional valence of their semantic self-images, rather than the emotional valence of their episodic memories, they simultaneously regard these perceptions as less
important than the group of advanced age. Nevertheless, semantic facts about the self in middle-aged seem to define most their wellbeing, while adults’ of an advanced age wellbeing seem to rely both in semantic and episodic autobiographical knowledge. We suggest that this difference results from the fact that adults of advanced age in our sample in the face of ageing and retirement are in process of informing current identity with past elements of identity. It is possible that in this process they rehearse and reflect in episodic autobiographical memories in order to promote self-continuity, feelings are emerging and despite the fact they regard self-images as more important, episodic memories of their life affect their overall wellbeing along with their whole emotional valence of their self-images.

In this last section, findings affording the older group particularly will be discussed. As mentioned above, participants of advanced age besides the ongoing ageing process, most of them are in the transitional phase of retirement. Given the fact that in most participants of the advanced age sample retirement and ageing overlap, we can assume that identity issues may have appeared and self-continuity may have been menaced. From the results of our study we have evidence that adults of an advanced age produced similar semantic self-knowledge, emerged in a similar age with the middle-aged adults, although their episodic autobiographical memories differed significantly and occurred in a bigger age compared to middle-aged adults. Moreover, our findings show that adults of advanced age regard semantic self-images as more important than the middle-aged adults. A function of the identity maintenance processes in adults of advanced age is to ensure identity continuity by sustaining landmarks of the life story and essential aspects of identity through loss (Kroger, 2002). It has been found also older adults not to substitute their identity with a “retiree identity” and not to have a lot of changes in their personal identities.
(Teuscher, 2003). Prebble (2013) showed that healthy older adults enhance their self-continuity via preserved semantic forms of memory and Haslam, Jetten, Haslam, Pugliese & Tonks (2011) argued that semantic self-knowledge is the mediator of the relationship between episodic self-knowledge and integrity of identity. We now can assume from the findings obtained in this study, that semantic self-images may have an additional mediating role for self-consistency and self-continuity in adults of an advanced age against the potential disruptions in identity in the face of related changes and losses of retirement and ageing. Semantic self-images formulated in earlier life are maintained and regarded as more important by adults of advanced age than middle-aged adults potentially in their struggle for identity consistency and identity continuity.

Hence, as regards the research question A examining the way middle-aged and adults of advanced age differ in the dimensions of semantic self-images and associated episodic autobiographical memories, findings of this study show that adults of advanced age regard semantic self-images as more important for them compared to the middle-aged adults. Moreover, the two age groups are differentiated significantly in the mean age of their episodic autobiographical memories’ formation. In terms of the Hypothesis 1, that the emotional valence of semantic self-images would be closer to the emotional valence of wellbeing than the emotional valence of episodic autobiographical memories in both groups, was only partially confirmed. The emotional valence of semantic self-images found to be closer to the emotional valence of wellbeing rather than the episodic autobiographical memories only in the middle-adults group. The emotional valence of wellbeing in the group of advanced age adults is linked to both the emotional valence of semantic self-images and episodic autobiographical memories.
Limitations and future research

This paper has limitations. Sample of this research were adults from the dwelling community and a bigger size of it was not available for recruitment. A bigger sample would be more ideal for a better generalization of our results. As all of our participants were native Greeks, our results may be restricted to socio-cultural effects. Future studies could include broader geographical units or multiple countries. We explored the differences in dimensions of semantic self-images and episodic autobiographical memories by comparing two age groups that were quite close to age years. Broader distance in age years among groups could result in more differences. Data was cross-sectional, as such conclusions about causality could not be proven and age differences may be the result of generational differences. Replication in longitudinal samples could have safer results about the relationship of semantic self-images and episodic autobiographical memories with wellbeing and illuminate changes that occur with age. We found that the age-group of an advanced age regard semantic self-images as more important compared to the middle-aged, their semantic self-images share similar themes and do emerge in a same age with the middle-aged adults and suggested that these effects is a result of their struggle to maintain self-consistency that the ageing process and the retirement can bring. Future studies could include a third age group bigger in age years than our advanced age group, in order to explore if indeed semantic self-images appeared these properties because of the transitional periods of ageing and retirement as we supported. More studies are needed also to investigate the way semantic self-images are linked to mental imagery. A fruitful future avenue of research could be to explore semantic self-images and associated episodic autobiographical memories in other transitional periods of life to
explore and ensure the additional mediating role for self-consistency in transitions in identity we suggested. Finally, a focus on semantic self-images in future studies could be of major importance to promote interventions based on them, given the fact their relatedness to our wellbeing. Taking into account that psychological wellbeing is more dependable to coherence of self-concept in later adulthood than in early adulthood (Diehl & Hay, 2007) future research in the role of semantic self-images for self-consistency and self-continuity in transitions of ageing and retirement could have the most of the benefits in wellbeing of adults in later adulthood.

Conclusion

This study was able to investigate whether middle-aged and adults of advanced age differ in the dimensions of semantic self-images and episodic autobiographical memories and explore the hypothesis that the semantic self-knowledge would be more closely linked to their wellbeing rather than the episodic autobiographical memories. Middle-aged have been found to underestimate the importance of their semantic self-images, despite appeared to have a more pivotal role to their wellbeing than their episodic autobiographical memories. On the other hand, wellbeing in the advanced age group found to be close to semantic self-images and their episodic autobiographical memories. The present paper brings evidence that semantic self-images of adults of advanced age may have an additional mediating role in enhancing self-consistency and self-continuity in disruptions of identity that the transitions of ageing and retirement may provoke.

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Authors’ contribution

IG designed the study under the supervision of DM, examined all participants, and participated in the statistical processing of the data and the writing of the manuscript. DM brought the general supervision in all phases of the study which is a part of the cross-sectional study of the Master Dissertation in the master program “Learning and sentiment in young and older adults” of Cognitive and Experimental Department of Psychology, in Aristotle University of Thessaloniki, Greece. GT was the second rater of episodic autobiographical memories assessment in Autobiographical Memory Interview and I-AM TASK.
References


https://psycnet.apa.org/doi/10.1017/CBO9780511558313.020


http://dx.doi.org/10.1177/0146167211429805


https://doi.org/10.2466/pr0.1997.81.1.47


http://dx.doi.org/10.1080/09658210143000353


https://doi.org/10.1080/741938208


https://doi.org/10.1016/j.neuropsychologia.2009.01.020

semantic distinction, clinical findings and neuroimaging studies]. Biologie
Aujourd’hui, 204(2), 159–79. https://doi.org/10.1051/jbio/2010011

Prebble, S., Addis, D. R., & Tippett, L. J. (2013). Autobiographical memory and
https://doi.org/10.1037/a0030146

The reminiscence bump and the self. Memory & Cognition, 36(8), 1403–1414.
https://doi.org/10.3758/MC.36.8.1403

memory and well-being in aging: the central role of semantic self-images.
https://doi.org/10.1016/j.concog.2015.02.017

image Norms for Adults Aged 17 to 88. Frontiers in psychology, 8, 1445.
https://doi.org/10.3389/fpsyg.2017.01445

Reed, A. E., & Carstensen, L. L. (2012). The theory behind the age-related positivity
https://dx.doi.org/10.3389%2Ffpsyg.2012.00339

Ryan, R. M., & Deci, E. L. (2001). To be happy or to be self-fulfilled: A review of
research on hedonic and eudaimonic well-being. In S. Fiske (Ed.), Annual Review of
Psychology, 52:141-166


http://dx.doi.org/10.1016/j.jarmac.2016.03.003


https://doi.org/10.1002/acp.3318


https://doi.org/10.1111/jopy.12449


https://doi.org/10.1146/annurev.psych.53.100901.135114


Table 1

*Mean semantic self-image scores in middle aged and older adults*
Table 2

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<th>Mean Age</th>
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Table 2

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