Please cite the Published Version

Moore, Leanne (2018) Personal and vicarious autobiographical memories of immoral actions and the self. Leeds Beckett University. (Unpublished)

Publisher: Leeds Beckett University

Downloaded from: https://e-space.mmu.ac.uk/621805/

Additional Information: This is an undergraduate project

Personal and vicarious autobiographical memories of immoral actions and the self

Leanne Moore

Supervised by: Dr Kata Pauly-Takacs   April 2018

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ABSTRACT

Previous research shows that for autobiographical memories of immoral actions, people tend to judge their own actions as less morally wrong and negative than actions in which others lied to them. Additionally, people tend to judge events that are further in the past as more morally wrong and negative than recent events. However, this only accounts for personal memories. We not only form and retain personal experiences, but the experiences encountered by others (vicarious memories). Studies have indicated similarities between personal and vicarious memories such that the present study aims to build upon existing research and explore these similarities in the context of morality. Twenty participants recalled six memories of lying from three different perspectives; actor, recipient and vicarious and the data was sampled from two temporal distances for each perspective; recent and distant. Each memory was followed by a series of associated ratings for phenomenological and functional qualities. Results show that for memories of lying, people judge their own behaviours as less morally wrong and less negative than when others have lied to them and when someone has lied to a friend or family member. Results found no significant effect for temporal distance. Phenomenological and functional qualities of vicarious memories closely resembled those of personal memories demonstrating that vicarious memories may in fact influence the construction of one's self-identity over time. These findings are discussed in relation to existing research in the field of autobiographical memory, moral psychology and vicarious memory.

1. INTRODUCTION

Autobiographical memories are recollections of personal past experiences. Given the focus on personal experiences, research confirms (e.g. Conway, 2005) that autobiographical memories are central to the self. It appears that the majority of the memories that make up our autobiography, are moral laden and therefore morality plays a significant role in the construction of the self. Research into autobiographical memory and morality has found that for memories of specific events such as lying, people tend to judge their own actions as less morally wrong and negative than actions in which others lied to them (Stanley Henne, Iyengar, Sinnott-Armstrong & De Brigard, 2017). As well as perceiving ourselves as better than our peers, we have the tendency to judge events that are further in the past as more morally wrong and negative than more recently occurring events (Stanley et al, 2017). Nevertheless, this research only explores the way we recall specific events that have been directly experienced by us i.e. personal autobiographical memories. People not only have the ability to form and retain personal experiences as autobiographical memories, but the experiences recounted by other people. These memories are referred to as *vicarious autobiographical memories* (Pillemer, Steiner, Kuwabara, Thomsen, Svob, 2015) and have yet to be explored in the context of morality. In order to fill this gap within the existing research, the current study is the first of its kind to assess the phenomenological and functional qualities of not just personal memories of immoral actions, but vicarious memories of immoral actions. This novel piece of research builds upon three distinct domains; autobiographical memory, moral psychology and vicarious memory. The following section will provide a thorough literature review of current research in the field of autobiographical memory with an explicit focus on the way we as human beings use our autobiographical memory to remember moral laden events and how this aids the development and maintenance of our self-identity. Furthermore, existing research into the importance of vicarious memory when considering self-identity will be explored and subsequently will be followed by an overview of the aims concerning the present research.

1.1. Personal autobiographical memories and the self

Autobiographical memories (AM) can be described as the recollections of one's personal past events and are characterised by a sense of subjective time, autonoetic awareness (Tulving 1972, 2002, 2005) and feelings of emotional re-experience (Tulving 1983); for example, an individual who remembers when they did their first bungee jump, will think about the time in which that event occurred, imagine themselves as being there and feel the exhilaration of the jump itself. Collectively these memories form a network called autobiographical memory which forms the basis of an individual's unique personal life story (Fivush, 2011). Autobiographical memory consists of an episodic and a semantic domain (Urbanowitsch, Gorenc, Herold & Schröder, 2013; Chessell, Rathbone, Souchay, Charlesworth & Moulin, 2014). Episodic autobiographical memory refers to the remembering of time and place specific events, for example, your first day at university. Episodic autobiographical memory typically involves the recollection of vivid emotional, perceptual and sensory detail (Tulving 2002). Semantic autobiographical memory refers to the recollection of factual information relating to one's personal past experiences independent of both place and time, for example, 'I am a psychologist'. Both episodic and semantic autobiographical memories involve past self-concepts, however, during episodic retrieval we have the ability to experience 'mental time travel'. This allows us, through

the medium of autonoetic consciousness, to become detached from the present and mentally project ourselves in both temporal directions-past and future. As a result we are able to imagine personal past happenings and our own potential future happenings (Tulving 2005, Suddendorf & Corballis 1997), an ability that is probably unique to humans (Tulving, 1983, Suddenhorf & Corballis 2007, Suddenhorf, Addis & Corbasllis 2009).

Due to personal experiences being paramount to autobiographical memory, it is assumed that memories of our lives have an intimate connection with our sense of who we are. The underlying presumption is that autobiographical memory is a major component of the 'self' and without it, we would have no existing sense of who we are. It has previously been found that memories can be altered to support the different aspects of the self and this can be referred to as *self-coherence* (Conway, Singer & Tagini 2004). Coherence acts on all aspects of memory coding to shape the access of memories and their content. This process means that memory is in fact coherent with an individual's motivations, goals, self-images and beliefs. Therefore, the self and memory create a coherent system whereby an individual's beliefs and knowledge of the self are supported and verified by autobiographical memories of that individual's specific past experiences (Conway, 2005). When individual's self-attitudes, beliefs and goals change, their memories are adjusted accordingly (Ross, 1989). For example, consider the following: an individual could recall a memory of a time their favourite sports team won an important game, however, they fail to recall how unfairly their team played throughout the game. The positive aspect of the memory is considerably more accessible than the negative aspect, therefore maintaining coherence between memory recall and the working self. Additionally, someone supporting the opposing team may recall how unfairly that team played because it is more coherent with their own attitudes, beliefs and goals and as a consequence, more accessible.

During late adolescence through to early adulthood, people within modern society begin to form combined narratives of the 'self' by re-experiencing the past and imagining the future in such a way that establishes one's purpose (McAdams 2001). Conway & Pleydell-Pearce (2000) proposed the Self-Memory system (SMS) as a model of autobiographical memory in which memories are temporary mental frameworks. The SMS contains two essential concepts: an autobiographical knowledge base and the working self. The autobiographical knowledge base forms an individual's life story and has been established as having three main levels; Specific events, lifetime periods and general events. Lifetime periods such as, *when I went to University, when I lived at X* and so on refer to thematic knowledge about that period of time as well as temporal knowledge regarding the duration of a period of time. These are autobiographical memories that have a clear beginning and end. Secondly, general events are more specific than lifetime periods and include both single events (e.g. *my trip to New York*) and repeated events (e.g. *morning dog walks in the woods*). Robinson (1992, as cited in Conway & Pleydell-Pearce, 2000) also suggested that sets of associated events may fall under this category. Robinson (1992) found that 'mini-histories' such as a *first romantic relationship* and *learning to drive a car* were organised around individual goal-achievement memories. These memories showed to communicate knowledge of particular significance for the self (e.g. interpersonal skills and skill acquisition ability). Furthermore, participants showed to recall highly vivid memories for pivotal goal-attainment moments such as *driving alone for the first time* or *a first kiss* and Robinson (1992) proposed that these first-time events served an important function in determining the nature of the self. The final type of

autobiographical memory is event-specific knowledge which is characterised by vivid imagery of a time and place specific event for example*, having a conversation with Y* or *your favourite date with your current partner.* The autobiographical knowledge base is organised as a hierarchy where lifetime periods act as a cue for general events which go on to cue the retrieval of event specific knowledge. Furthermore, the working self is described by Conway & Pleydell-Pearce (2000) as one's current conception of the self that holds the individual's life goals and is time and context dependant. The working self is linked with Baddeley's (1986) working memory model in which the control processes within the working memory are involved in autobiographical memory retrieval and encoding. The working self therefore regulates access to the autobiographical knowledge information based on the coherence between the autobiographical memories and an individual's current working self. In other words, memories that confirm the goals, attitudes and beliefs of the individual will be highly accessible compared to those which are perceived as being in conflict or undermine the individual's current working self.

Although the self-identity function is the most emphasised within autobiographical memory research, Williams, Conway and Cohen (2008) suggested that autobiographical memory serves as a social and directive function as well (also see Bluck, 2003). Firstly, reminiscing about the first time you met your significant other with family and friends for example, can be a positive and socially encouraging experience. (Neisser, 1988). The sharing of these memories creates a sense of intimacy between individuals (Alea & Bluck 2003). Disturbance to the autobiographical memory due to neurological impairments (e.g. Alzheimer's disease or Amnesia) could therefore be the reason that people feel like they disconnect from the impaired individual (Robinson & Swanson 1990, Alea & Bluck 2003). Furthermore, Alea & Vick (2010) assessed the social function of autobiographical memory in romantic couples and found higher marital satisfaction levels amongst individuals who stated that they often reminisce with their partners about times that define their relationship. Results therefore provide significant support for the social function and benefit of autobiographical recollection. Secondly, the directive function uses past experiences as a reference point and a guide for our present and future actions (Pillemer, 2003), for example, you remember what happened the last time you lead a group at work and subsequently use this information to guide your behaviour the next time you lead a group.

A strong link between autobiographical memory and an individual's self-identity has been established within existing research (e.g. Conway & Pleydell-Pearce 2000, Conway, Singer & Tagini 2004). However, in a similar and more specific vein of research it is suggested that morality plays an essential role in the perception of one's self-identity (Strohminger et al, 2017). The following section draws upon research exploring the way we recall specific autobiographical memories of moral laden events (both immoral and moral) and the way these event specific memories influence the shaping of one's self-identity.

1.2. Morality and the Self

According to the dominant cognitive-developmental approach, moral motivation requires an individual to act against their own self-interests and tendencies out of duty, obligation and sacrifice (Walker 2013) and therefore, morality should not serve one's self interests or self-beliefs. However, our moral judgment strongly influences both the way we view others and the way we view ourselves (Stanley et al, 2017; Escobedo &

Adolphs, 2010). It appears that a significant proportion of the memories that are most important to us and which our self depends on, are moral laden autobiographical memories and so morality is a fundamental part of the formation and understanding of an individual's self-identity (Strohminger, Knobe & Newman, 2017). However, there have been very few studies that have actively explored the way we remember moral and immoral events and consequently their role in the shaping of one's self-identity.

Existing research in moral psychology suggests that memories are vulnerable to distortion and biases upon recollection (Alicke & Govorun, 2005), for example, scholars have found evidence that remembering is a re-constructive process (e.g. Katz, 1989; Montgomery & Rajagopal 2018). On recollection, people do not retrieve the memory as whole or complete but instead reconstruct it using accessible information within their memory and information associated with the memory. It has also been suggested that post event information has the ability to overwrite original information within the memory resulting in the creation of false memories (Loftus, Donders, Hoffman & Schooler, 1989). Distortions can lead to self-enhancement (Alicke & Govorun, 2005) and this bias is of particular relevance when considering the retrieval of moral laden memories. When a person's perception of themselves is better or more positive than their perception of others, they may have actively compared themselves in order to boost their own self-perceptions or reduce their perception of others. Self-enhancement can occur without social comparison but either way the self is seen as better than other people therefore maintaining a positive identity. Furthermore, people have been found to remember their past in such a way that minimises negativity and maximises the positivity in which they view themselves (Escobedo & Adolphs 2010) compared to the way they view others (Conway, Singer & Tagini, 2004, Stanley et al 2017). People are therefore more likely to recall positive past experiences of themselves than they are to recall positive past experiences of other people (D'Argembeau & Linden 2008). In other words, we are motivated to construct our autobiographical memory in a specific way that supports and maintains a positive self-view (Thomsen & Pillemer 2016) and leaves an individual feeling valued and significant (Kaufman, Cundiff & Crowell, 2015). Overall, this is consistent with the idea that memories with a low correspondence to the original event (i.e. one's that aren't completely accurate) can be beneficial in terms of maintaining a positive self-identity because the individual's memory is coherent with their current beliefs attitudes and goals (Conway & Loveday 2015, Demirey & Bluck 2011).

Following on from this, Escobedo and Adolphs (2010) studied the way in which temporal distance of both moral and immoral actions effected an individual's perception of themselves. 100 participants, who were unaware of the moral testing criterion, were given 30 cue words used specifically to prompt the recollection of moral laden events (e.g. 'guilty', 'compassionate', 'unfaithful', 'proud' etc.). Following recollection, participants were asked to complete a 52 item online questionnaire where they answered questions about the action in the memory, the emotions they felt regarding the behaviour and moral judgements regarding the memory. Results indicated that the more negatively valenced moral memories (e.g. guilt) were somewhat more inaccessible and distant than the positively valenced memories (e.g. pride). These findings suggest a temporal bias when it comes to establishing our personal autobiographical pasts, with the propensity to recall the more moral events as the most recent. This research is in accordance with the suggestion that autobiographical memories serve a self-enhancement function (Conway & Pleydell-Pearce 2000, Demiray & Janssen 2015) allowing us to maintain a positive self-identity.

Furthermore, of particular relevance to the present study, Stanley et al (2017) conducted a similar investigation to Escobedo & Adolphs (2010) however, it focused not only on our tendencies to display temporal bias when recalling moral laden experiences, but also the way we evaluate other people in comparison to ourselves. They focused on the phenomenological and functional qualities of autobiographical memories of two specific types of moral transgression; lying and emotional harm. In *study 1a,* 51 participants were invited to take part in a lab study and asked to recall specific autobiographical memories of lying from two different perspectives: actor and recipient. Memories from an actor perspective refer to memories of lies the participant had committed, and the recipient perspective refers to memories of lies committed to the participant. After recalling as many memories as they could within a 30 minute time-frame for each perspective, participants were asked to provide a total of six associated ratings on a 7 point scale. These ratings measured how well the participant remembered the event (1, hardly; 7, very well); how well they remembered how they felt during the event (1, not at all; 7, very well); perceived morality/immorality (1, very morally wrong; 7, very morally right); associated emotions (valence: 1, very negative; 7, very positive); emotional intensity (1, not at all intense; 7, very intense) and perceived personal change since the event occurred (1, very similar; 7, very different). *Study 1b* was identical but for memories of emotional harm and *Study 2* asked for participants to recall the same memories but for times when they perceived themselves as similar and different from their current self. Three conclusions were inferred: people perceive their own actions as less morally wrong and less negative than actions in which others had emotionally harmed or lied to them; people have a tendency to judge the more temporally distant actions to be more morally wrong than temporally recent actions; people judge their actions as more morally wrong when they believed they were a very different person to they are now compared to actions where they believed that they were very similar people to now.

The results of Stanley et al's (2017) and Escobedo & Adolph's (2010) studies clearly demonstrate a self-enhancement bias which as a result maintains a positive self-identity. The temporal self-appraisal theory (Wilson & Ross 2000) offers an explanation for this occurrence. According to this theory individuals are more motivated to remember more moral and positive experiences as significantly more recent than past negative and immoral experiences. This way people continue to feel they can take credit for the past positive or moral experiences which in turn benefits their self-view, whereas perceiving an immoral or negative experience as more temporally distant means that they can associate those previous experiences with a past self therefore, posing no harm to their current self.

The present study adopts a similar methodology to Stanley et al (2017) which will be discussed further on however, their findings as well as those of and Escobedo & Adolph's (2010) will be built upon by introducing the concept of vicarious autobiographical memories into the research. The notion of vicarious autobiographical memories and the research concerning it will be introduced in the following section in order to provide a thorough understanding as to its importance when considering the self.

1.3. Vicarious memories and the Self

Although previous research into autobiographical memory focuses mainly on personal past experiences, this is not the only component of remembering episodic past events. Humans have the ability to not only form and retain memories of their own personal

lived experiences, but the past experiences that are reported by other people. Larsen and Plunkett (1987) were some of the first researchers to touch upon the difference between directly experienced events and events reported by others. They stated that these are the two different ways in which people gain knowledge about real life happenings in the world. For example, an individual may recall a vivid and emotionally intense positive memory of being handed their graduation certificate, or they may have a vivid and emotionally/physically intense memory of a graduation ceremony proudly described to them by an immediate family member. Similarly, a person may have a vivid and emotionally intense negative memory of an incident where they were physically abused as a young child, or they may have a vivid and emotionally intense memory of an incident of physical abuse described to them by a close friend.

The following research looks into memories of events recounted to an individual by an external source, such as a significant other (e.g. boyfriend/girlfriend, friend or family member) rather than having experienced it first-hand. The term *vicarious memories* is used to refer to the recollections people have of specific events or episodes told to them by these external sources when they were not present. Furthermore, social cognition research has found that we mentally create models of other people consisting of information about their attitudes and traits and as a result it has been argued that the other person's autobiographical memory information may be included as part of these mental models within the autobiographical memory base (Thomsen, Steiner, and Pillemer 2016). This effectively allows an individual to recall specific experiences from another person's autobiographical narrative, for example, young adults are able to recall pivotal events from the life stories of their parents (Svob and Brown's 2012).

Although the recalled event hasn't been experienced directly by the individual, the vicarious memory may hold various qualities that bear a resemblance to directly experienced personal memories (Pillemer et al 2015). These include phenomenological qualities such as emotional responses (valence and intensity), vivid imagery and physical reactions. Similarly to the, research into memory functions have mainly focused on events which involve the individual in them. Personal memories have been shown to have self, social and directive function (Williams, Conway & Cohen, 2008) although new research is beginning to explore the functional significance of vicarious autobiographical memory (Lind & Thomsen, 2018, Thomsen & Pillemer 2016). Lind & Thomsen (2018) studied the similarities between empathy and self-identity functions of both personal and vicarious life stories. 240 students were asked to provide details of personal life chapters as well as a close other's life chapters. Memories were rated for valence, causal connections, identity disturbance and empathy. The results indicated that the more positive personal chapters were rated as lower for identity disturbance and higher for empathy. Ratings for vicarious chapters were parallel to the ratings for personal chapters, however, showed empathy to be unrelated. These findings give evidence to support the notion that autobiographical memory contributes to self-identity but more importantly Lind & Thomsen (2018) provide significant supporting evidence for the influence of vicarious autobiographical memories on self-identity. Lind & Thomsen (2018) focus on life stories specifically however, research has extended this to specific vicarious memories and have identified significant results for the influence of specific vicarious memories on self-identity (Thomsen and Pillemer, 2016; Pillemer, Steiner, Kuwabara, Thomsen and Svob 2015). Pillemer et al (2015) conducted research exploring the similarities of memory qualities between the two types of specific autobiographical memory;

personal and vicarious. 141 psychology undergraduates were assigned to one of two conditions. In one condition participants were asked to recall a personal memory of a specific event from their own life which they had shared with a friend and a vicarious memory of a specific event from a friend's life which they shared with the participant. In the second condition, participants were asked to recall the same 2 memories but the 'friend' was replaced with 'a family member'. After each memory recollection, the participants were asked to provide a series of ratings concerning memory qualities using a five point Likert scale: how positive was the event; how negative was the event; how emotional they were when thinking about the memory; what type of emotion was experienced; how vivid was the memory; could they see the event in their mind's eye; and did they have a physical reaction when recalling the memory. Ratings for memory functions were also provided on a five point scale: does the memory help me understand myself (self); make me feel better about myself (self); influence my relationships with other (social); helps me to solves problems in life (directive). The wording was altered for the vicarious memories to reflect the participant's feelings towards the friend/family member's event. Results found that vicarious memories share important functional and phenomenological qualities with personal memories, but at a lower intensity. These results provide supporting evidence for vicarious memories serving a significant self, social and directive function parallel to the phenomenological and functional qualities of personal autobiographical memories. Despite the potentiality of vicarious memories holding many similar qualities to personal memories, current memory models categorise personal and vicarious memories separately due to the impersonal nature of the vicarious memory.

Vicarious memories are particularly important in terms of their implications. Research within clinical psychology has identified a significant impact that hearing stories of others' distressing and potentially traumatic events and subsequently remembering them can have on professionals such as therapists. The hearing of these experiences is referred to as *vicarious traumatisation* and has a heavy focus within the research of vicarious memories. It is defined as the personal transformations in the self of trauma workers that occur as a result of engaging empathetically with a client's reports of traumatic experiences that can cause symptoms similar to the client as well as cause the individual to change the way they perceive themselves and others (McCann & Pearlman 1990). Symptoms are conspicuous amongst a variety of professions vulnerable to hearing graphic descriptions of another person's traumatic experiences, for example, emergency workers (Setti & Lourel 2016), therapists working with sexual abuse survivors (Brady & Guy & Poelstra & Brokaw 1999), medical students (Al-Mateen et al, 2015), therapists working with sexual offenders (Moulden & Firestone 2007), and solicitors for example (Vrklevski & Franklin, 2008). Research into vicarious traumatisation demonstrates the implication of vicarious memories however, research remains sparse.

1.4. Overview of the present research

Autobiographical memory and it's centrality to the self has been thoroughly researched over the past few decades. However, there's a lack of research into specific autobiographical memories of immoral and moral experiences. Similarly, there is insufficient research into different types of vicarious memories and their effect on an individual's self-identity. Therefore, a gap into the literature is evident for research that focuses on how individuals, when recalling personal autobiographical memories of immoral actions, perceive themselves in the present in comparison to other people as

well as their previous selves. Additionally, the influence someone else's recounted experiences can have on their own self-identity is yet to be explored.

The present study looks at the effect autobiographical memories of lying can have on one's self-identity. Therefore, drawing from Stanley et al's (2017) study into the effect of lying and emotional harm as well as Pillemer et al's (2015) research into vicarious memories, the current study focuses on the influence of personal as well as vicarious memories of lying on one's self-identity, as well as the phenomenological and functional qualities vicarious memories can have on the self. Furthermore, the methodology differentiates between three types of memory; actor - when the participant has lied to someone, recipient - when the participant has been on the receiving end of a lie, and vicarious - when a friend or family member has shared with the participant a time they have been lied to by someone. Additionally, the actor, recipient and vicarious memories were sampled from two temporal distances; recent (within the last year) and distant (more than a year ago). Lying was chosen as an appropriate immoral action to study as research has found that dishonesty is one of the most common immoral actions (Wilhelm, Wisneski, Brandt & Skitka, 2014) and social behaviours (Bryant, 2008) that exists in our everyday life**.**

Although the current study is of novel quality, based on previous research, the following hypotheses have been created. Results are expected to replicate Stanley et al's (2017) findings that the personal event in which the participant had lied to someone, both recent and distant, will be rated as less morally wrong than when the participant had been lied to. Another finding expected to replicate Stanley et al (2017) is the distant memories (more than a year ago) in the actor perspective, will be rated as more morally wrong and negative than the recent memories (within the last year) in the actor perspective. Based on currently available research on vicarious memories, it is expected that the ratings for vicarious memories will closely resemble the ratings for personal memories but to a lower intensity. Finally, vicarious memories are expected to be rated as less morally wrong than personal memories where the participant had been lied to (actor perspective).

2. METHOD

2.1. Participants

37 participants took part in the questionnaire. However only 20 participants provided a full response. Data was analysed for the remaining 20 participants (M age=29, range=18-55). Undergraduate Psychology students at Leeds Beckett University who participated, received 4 SONA points on completion.

2.2. Ethical considerations

Prior to making the study available, ethical approval was required from the Local Research Ethics committee (LREC) (see appendix i for ethical approval).

2.3. Materials and Procedure

Participants were given the opportunity to take part in the current study via the Leeds Beckett University online participation system (SONA) and social media. Once they had clicked the link, participants were directed to Qualtrics.com and were provided with a virtual information (see appendix ii) sheet followed by a virtual consent form (see appendix iii). To demonstrate virtual informed consent, participants were required

to tick all boxes within the consent form. Participants were only able to begin the study if consent was given.

On completion of the consent form, participants were asked to recall a total of six specific events of lying; 2 from an actor perspective, 2 from a recipient perspective and 2 from a vicarious perspective. Both questions for each condition were sampled from two temporal distances; recent (within the last year) and distant (more than a year ago). Participants gave ratings for one recollection before moving onto the subsequent memories. The order in which the questions were presented was counterbalanced within Qualtrics. Specific instructions for each part of the questionnaire are detailed below.

2.3.1. Test Conditions

Two of the six questions asked participants to recall a recent and distant specific event from their own personal pasts from an actor perspective; (a) Think back to a time within the last year and try to recall a specific memory of an event where you lied to someone; (b) Think back to a time more than a year ago a try to recall a specific memory of an event where you lied to someone, and a recent and distant specific event from a recipient perspective; (c) Think back to a time within the past year and try to recall a specific memory of an event where you discovered someone lied to you; (d) Think back to a time more than a year ago and try to recall a specific memory of an event where you discovered someone lied to you. The remaining two questions asked participants to recall one recent and one distant specific event recounted to them by a family member or friend (vicarious perspective); (e) Think back to a time within the past year and try to recall a specific memory of an event from a friend or family member's life (that they told you about) where someone had lied to them; (f) Think back to a time more than a year ago and try to recall a specific memory of an event from a friend or family member's life (that they told you about) where someone had lied to them.

Participants who were able to identify and recall memories for each question were asked to describe the memory in 2-6 sentences, with the instruction to "try and provide as much detail as you can" for the personal memories and to "try to provide as much detail as they shared with you" for the vicarious memories. Additionally, participants were asked to specify the temporal distance in days for a recent memory ("within the last year") or years for a distant memory ("more than a year ago"). Definitions were provided for different types of lies.

2.3.2. Phenomenological ratings

For each memory, personal and vicarious, participants provided associated ratings for the event they had previously described in order to assess phenomenological properties. The questions were asked in the following order: how difficult was it for you to identify and retrieve this event from your memory? (1=not at all difficult, 5=very difficult); what were your emotions associated with the event? (1=very negative, 5=very positive); how intense were your emotions during/toward this event? (1=not at all intense, 5=very intense); how vivid is this event in your mind's eye? (1=not at all vivid, 5=very vivid); how morally wrong was the action performed? (1=Not at all morally wrong, 5=Very morally wrong); how frequently have you thought or talked about the event since it happened/your friend/family member shared with you? (1=Not frequently at all, 5=Very frequently); to what extent do you believe you are the same person compared to when the event occurred/your friend/family member shared it with you?

(1=Very similar, 5=Very different). For the questions addressing vicarious memories, the words were changed slightly to reflect the impact that the friend's or family member's memory had on the participant.

2.3.3. Autoneosis

Two of the ratings addressed the participant's autonoetic consciousness and sense of 'mental time travel' using a five point scale (1=completely disagree, 5=completely agree). The statements were: when I think of this past event I have a sense of going into the past and finding myself at the time when the event occurred; when I think of this past event I feel like I am really experiencing the situation as if I'm there.

2.3.4. Autobiographical memory functions

Participants were asked to provide ratings addressing self, social and emotional functions on a five point scale (1=completely disagree, 5=completely agree). The statements for the personal memories were: this past event tells me something about my identity (who I am); this past event helps me understand myself; this past event influences the relationships I have with others; this past event prepares me to deal with an emotion I might have in the future. For vicarious memories, the phrase 'this past event' was replaced with 'this past event of my friend's/family member's'.

3. RESULTS

3.1. Content analysis

Content analyses took place individually for both recent and distant memories in the actor, recipient and vicarious memories therefore, six sets of themes were identified.

3.1.1. Actor perspective

For recent personal memories in which the participant was the actor, lying to get out of plans such as work, nights out with friends and dates was a recurrent theme. Responses also included participants lying to avoid conflict, lying regarding their whereabouts, trivial white lies e.g. lying to avoid telling someone that they were running late, and other idiosyncratic responses.

Lying to get out of plans e.g. work, a night out or just simply to avoid seeing someone were frequent amongst distant personal memory responses where the participant was the actor. Other recollections described experiences of committing adultery, lying regarding their whereabouts, white lies and other idiosyncratic responses.

3.1.2. Recipient perspective

For recent personal memories in which the participant was the recipient of a lie, responses showed a frequency of lies told within the workplace, Other responses included those of people lying to the participant regarding theft (financial and material), adultery, lying to get out of plans with friends white lies and other idiosyncratic responses.

For distant personal memories where the participant was on the receiving end of a lie, adultery was a reoccurring response along with theft, lying to get out of plans (e.g. social events) or avoid seeing someone. Other responses included lying about current whereabouts, lying to avoid getting into trouble (e.g. physical abuse, damage to a car) and other idiosyncratic responses.

3.1.3.   Vicarious perspective

For recent vicarious memories, responses fell into various categories such as recollections of friend/family member's experience of a partner's adultery, lying to avoid embarrassment and other idiosyncratic responses.

For distant vicarious memories, responses included recollections of friend's experiences involving a partner committing adultery, a friend or family member's experience of theft and being lied to about it, a friend or family member being lied to so the person could get out of plans and other idiosyncratic responses

3.2.   Morality and emotion

For perceived moral wrongness, Mauchly's Test of Sphericity indicated that the assumption of sphericity had not been violated, $X^2(14)=16.80$, p=.274. A one-way repeated measures ANOVA of perceived morality showed a statistically significant difference in scores across the six different memory types, $F(5,95)=5.13$, p<.05 (see *figure 1*). A post hoc pairwise comparison test indicated that the mean score for morality of recipient-distant memories (M=4.20, SD=0.89) and vicarious-distant memories (M=4.50, SD=0.89) were significantly different from actor-recent (M=3.30, SD=1.26), actor-distant (M=3.05, SD=1.31) and recipient recent (M=3.55, SD=1.10) memory scores. However, recipient-distant and vicarious-distant scores of morality were not significantly different from one another (p>.05). Actor-recent morality scores showed no significant difference from actor-distant, recipient-recent and vicarious recent scores (M=3.95, SD=1.15). Actor-distant scores showed no significant difference from recipient-recent and vicarious recent scores. Recipient-recent scores were not significantly different from vicarious-recent scores and finally, the mean scores of recipient-distant and vicarious recent scores did not differ significantly from vicarious-distant scores.

For perceived valence, Mauchly's Test of Sphericity indicated that the assumption of sphericity had been violated, $X^2(14)=25.26$, p=.034 therefore the degrees of freedom were corrected using the Huynh-Feldt estimates of Sphericity (ε=.83). Results for the ANOVA of perceived valence showed a statistically significant difference in scores across the six different memory types, $F(4.14,78.70)=4.86$, p<.05 (see *figure 2*). A post-hoc pairwise comparison test indicated that the mean score of valence for recipient-distant memoires (M=1.50,SD=0.60) was significantly difference from recipient recent (M=2.15, SD=1.31), actor-distant (M=2.70, SD=1.26), actor-recent (M=2.60, SD=0.82) and vicarious-recent (M=2.05, SD=0.76) scores for valence. Vicarious-distant (M=1.85, SD=0.88) scores for memory valence showed to be significantly distant from actor-recent and actor-distant scores and finally, vicarious-recent scores differed significantly from actor-recent scores. However, results showed that recipient-recent memory scores did not significantly differ from vicarious-distant, actor-distant, actor-recent and vicarious-recent valence scores. Actor-distant scores did not significantly differ from vicarious-recent or actor-recent scores and finally, vicarious-distant scores showed no significant difference from recipient-distant and vicarious recent scores.
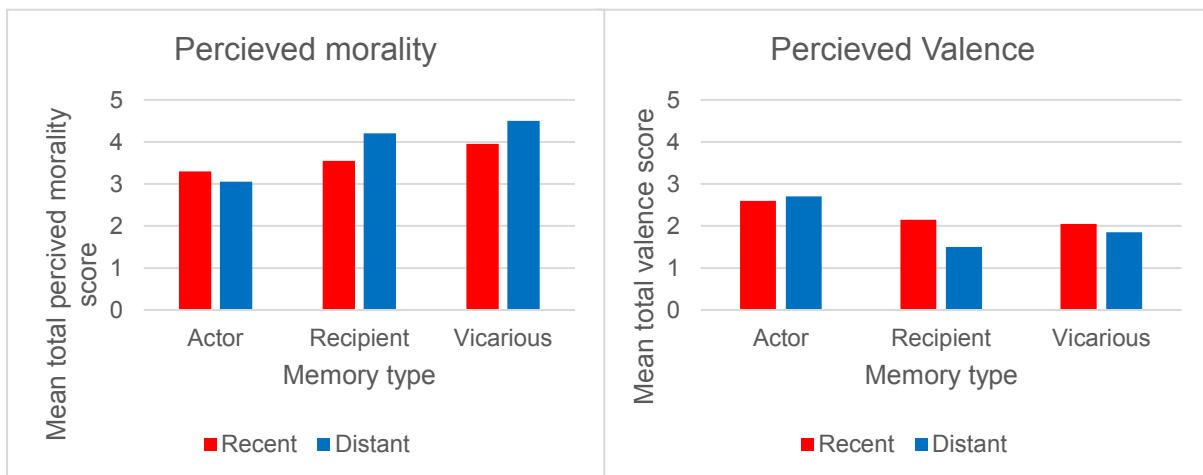
Figure 1: Mean score of perceived morality for actor, recipient and vicarious memories in recent and distant temporal distances.

Figure 2: Mean score of perceived valence for actor, recipient and vicarious memories in recent and distant temporal distances.

3.3. Temporal distance and emotion

An initial ANOVA showed no significant interaction between time and valence of memories within the actor perspective, $F(1,19)=0.112$, $p>.05$. A second ANOVA indicated no significant interaction between time and emotional intensity within the actor perspective, $F(1,19)=1.75$, $P>.05$. A third ANOVA showed no significant interaction between time and perceived morality within the actor perspective, $F(1,19)=0.40$, $p>.05$. However, a final ANOVA indicated a significant interaction between temporal distance and perceived personal change, $F(1,19)=4.75$, $p<.05$. Perceived personal change in the actor-recent perspective (M=1.85, SD=1.18) significantly differed from perceived personal change in the actor-distant perspective (M=2.85, SD=1.73).

3.4. Memory qualities

For retrieval difficulty, Mauchly's Test of Sphericity indicated that the assumption of sphericity had not been violated, $X^2(14)=14.04$, $p=.451$. An ANOVA showed a statistically significant difference in scores across the six different memory types, $F(5,95)=3.66$, $P<.05$ (see *figure 3*). Post-hoc pairwise comparisons indicate that actor-recent scores (M=2.20, SD=1.36) and recipient-recent scores (M=1.95, SD=1.19) for retrieval difficulty were significantly different from actor-distant (M=3.00, SD=1.52) and vicarious-distant scores (M=2.90, SD=1.48). Vicarious-recent (M=2.15, SD=1.46) and recipient-distant (M=2.35, SD=1.42) scores showed no significant difference from any of the other memory types. Actor-recent scores showed no significant difference from recipient-recent and actor-distant scores showed no significant difference from vicarious-distant scores.

For emotional intensity, Mauchly's Test of Sphericity indicated that the assumption of sphericity had not been violated, $X^2(14)=19.73$, $p=.142$. The ANOVA results showed a statistically significant difference between mean scores for emotional intensity of memories, $F(5,95)=3.42$, $p=.007$ (see *figure 4*). A post-hoc pairwise comparison test

indicated that the mean score of emotional intensity for recipient-distant scores (M=3.80, SD=0.25) was significantly different from actor-recent (M=2.55, SD=0.24), actor-distant (M=2.95, SD=0.28) and vicarious-recent (M=2.75, SD=0.30) scores. Additionally, recipient-recent scores (M=3.60, SD=0.23) of emotional intensity were significantly different from vicarious-recent and actor-recent scores (see, figure 3). Vicarious-distant (M=scores of emotional intensity showed no significant difference from the mean scores of any other memory types. Vicarious-recent scores did not differ significantly from either of the actor scores, recipient-recent scores did not differ significantly from actor-distant or recipient-distant and finally, actor-recent scores did not significantly differ from actor-distant scores.

For memory vividness, Mauchly's Test of Sphericity indicated that the assumption of sphericity had not been violated, X²(14)=14.79, p=.397. An ANOVA showed significant main effects of memory types for the vividness of a memory, F(5,95)=3.37, p<.05 (see *figure 5*). Post-hoc pairwise comparisons showed a significant difference in memory vividness of actor-distant scores (M=2.80, SD=1.32) from actor-recent (M=3.60, SD=1.50), recipient-recent (M=4.10, SD=1.07) and recipient-distant (M=3.85, SD=1.14). Additionally, vicarious-distant scores of vividness (M=3.10, SD=1.25) differed significantly from recipient-recent and recipient distant scores.

Two of the ratings addressed the participant's mental time travel/autonoesis, 1) I have a sense of going into the past and finding myself at the time the event happened; 2) I feel like I am really experiencing the situation as if I am there. For the first question, Mauchly's Test of Sphericity indicated that the assumption of sphericity had not been violated, X²(14)=22.94, p=.063. An ANOVA indicated a statistically significant difference between the scores, F(5,95)=2.58, P<.05 (see *figure 7a*). Post-hoc comparisons showed that recipient-distant scores (M=3.80, SD=1.32) differed significantly from vicarious-recent (M=2.95, SD=1.39), actor-distant (M=2.80, SD=1.44) and actor-recent scores (M=2.90, SD=1.37). Vicarious-distant (M=3.10, SD=1.58) scores did not significantly differ from any of the other memory score, vicarious-recent scores did not differ significantly from recipient-recent (M=3.45, SD=1.47), actor-distant and actor-recent scores, actor recent scores did not significantly differ from actor distant and recipient-recent scores and finally recipient-recent scores did not significantly differ from actor-distant. For the second question, Mauchly's Test of Sphericity indicated that the assumption of sphericity had not been violated, X²(14)=18.78, p=.177. An ANOVA showed a statistically significant difference between scores across the six different memory types, F(5,95)=3.30, p<.05 (see figure 7b). The post-hoc test showed that both actor-recent (M=2.75, SD=1.55) and actor-distant (M=2.75, SD=1.29) were significantly different to both recipient-recent (M=3.55, SD=1.28) and recipient-distant (M=3.85, SD=1.18) scores. Additionally, recipient-distant scores differed significantly from both vicarious-recent (M=2.85, SD=1.57) and vicarious-distant (M=3.00, SD=1.59) scores. Vicarious-distant scores did not significantly differ from vicarious-recent, recipient-recent, actor-recent and actor-distant scores, recipient-recent scores didn't differ significantly from recipient-distant or vicarious-recent scores, actor-recent scores did not differ significantly from vicarious-recent or actor-distant and finally actor-distant scores did not significantly differ from vicarious-recent scores.

The final memory quality participants rated was the frequency they thought and talked about the memory. Mauchly's Test of Sphericity indicated that the assumption of sphericity had been violated, X²(14)=24.325, p=.044 therefore the degrees of freedom

were corrected using the Greenhouse-Geisser estimate of sphericity (ε=.69). Results for the ANOVA of frequency showed a statistically significant difference in scores across the six memory types, $F(3.43,65.11)=3.83$, $p<.05$ (see *figure 6*). The post hoc comparisons indicate that actor-distant (M=1.45, SD=0.69) scores for frequency significantly differ from both recipient conditions (recent, M=2.75, SD=1.12; distant, M=2.95, SD=1.28) and both vicarious conditions (recent, M=2.65, SD=1.57; distant, M=2.60, SD=1.57). Actor-recent scores (M=2.00, SD=1.03) were not significantly different from actor-distant, recipient-recent, vicarious-recent and vicarious-distant scores. Recipient-recent scores were not significantly different from recipient-distant and both vicarious conditions and finally, recipient-distant scores were not significant from both vicarious conditions.
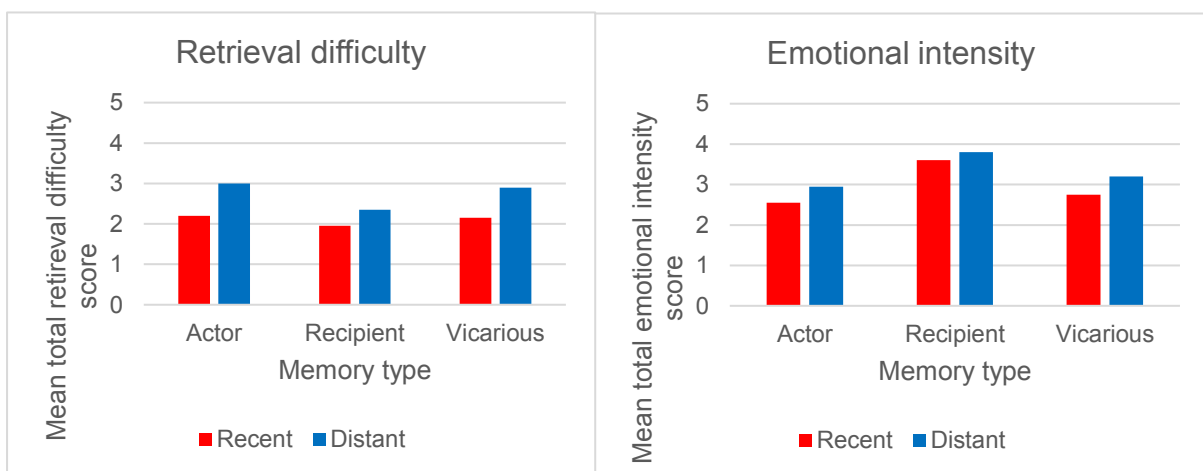

Figure 3: Mean score of retrieval difficulty for actor, recipient and vicarious memories in recent and distant temporal distances.

Figure 4: Mean score of emotional intensity for actor, recipient and vicarious memories in recent and distant temporal distances.
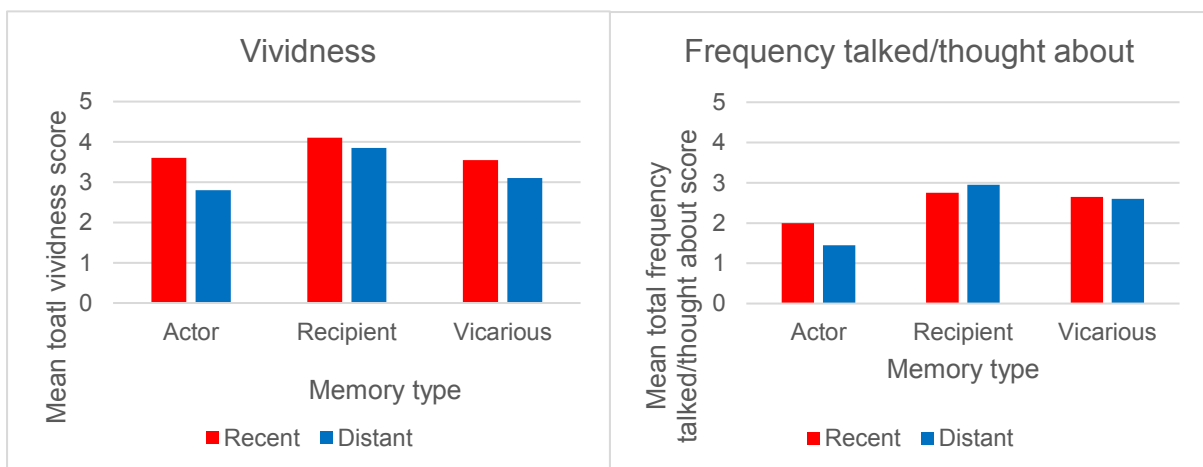

Figure 5: Mean score of vividness for actor, recipient and vicarious memories in recent and distant temporal distances.
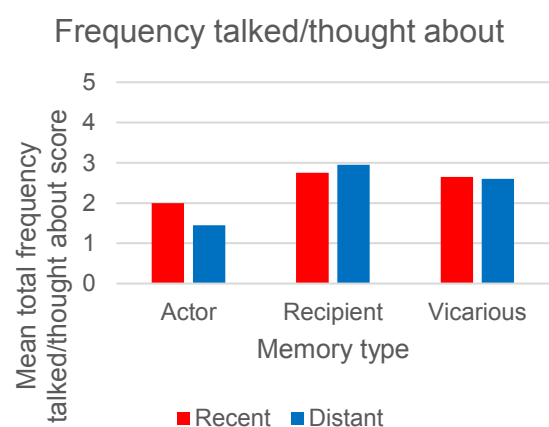

Figure 6: Mean score of frequency talk/thought about for actor, recipient and vicarious memories in recent and distant temporal distances.
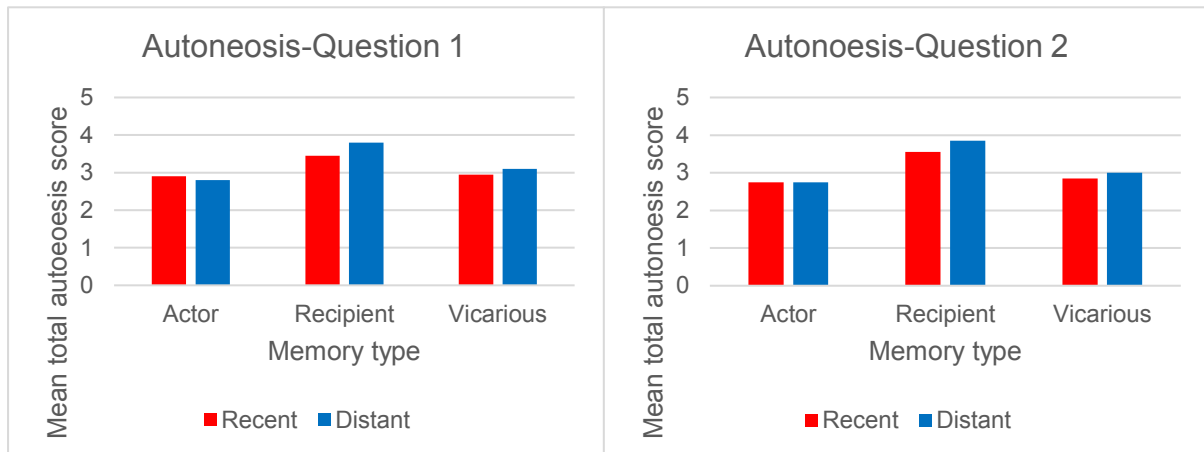
Figure 7a: Mean score of autoneosis (question 2) for actor, recipient and vicarious memories in recent and distant temporal distances.

Figure 7b: Mean score of autoneosis (question 1) for actor, recipient and vicarious memories in recent and distant temporal distances.

3.5. Memory functions

Due to the questionnaire including two questions addressing self-functions, a Pearson's correlation was computed for all 6 memory types to assess the relationship between two variables assessing self-functions; 1) the memory tells me something about my identity (self-variable 1), 2) this memory helps me to understand myself (self-variable 2). For actor-recent memories, there was a strong positive correlation between the two variables, r=.808, n=20, p=.000). For actor-distant memories, no significant correlation was identified, r=.403, n=20, p=.078. For recipient recent memories, a strong positive correlation was identified between the 2 variables, r=.980, n=20, p=.000. For recipient distant memories, a strong positive correlation was identified between the 2 variables, r=.794, n=20, p=.000. For vicarious recent memories, a strong positive correlation was identified between the 2 variables, r=.669, n=20, p=.001. For vicarious distant memories, a strong positive correlation was identified between the 2 variables, r=.811, n=20, p=.000. Due to there being no correlation between variables in the actor distant condition, an average was not computed between self-variable 1 and self-variable 2 and for the sake of the following data analysis, they were treated as two separate variables.

After assuming sphericity ($X^2(14)$=16.11, p=.311, an ANOVA showed statistically significant results for this memory tells me something about my identity, $F(5,95)$=4.11, p<.05. Post-hoc pairwise comparisons showed vicarious-distant (M=2.45, SD=1.15) ratings as significantly different from both actor memory types (recent, M=3.15, SD=1.35; distant, M=3.25, SD=1.64) and recipient-distant scores (M=3.80, SD=1.01) and recipient-distant scores as significantly different from vicarious-recent (M=2.50, SD=1.15) and recipient-recent scores (M=2.70, SD=1.53).

After assuming sphericity ($X^2(14)$=12.02, p=.609, an ANOVA showed statistically significant results for this memory helps me to understand myself, $F(5,90)$=3.05, p<.05. Post-hoc pairwise comparisons showed recipient-distant (M=3.68, SD=1.20) scores as significantly different from both vicarious memory types (recent, M=2.53,

SD=1.26; distant, M=2.53, SD=1.35) and recipient-recent scores (M=2.47, SD=1.39) as well as recipient-recent scores as significantly different from actor-distant scores (M=3.42, SD=1.46). Actor-recent scores (M=2.95, SD=.35) did not significantly differ from scores of any other memory types.

After assuming sphericity (X^2(14)=6.61, p=.950, an ANOVA showed statistically significant results for this memory influences my relationships with others, F(5,95)=2.94, p<.05. Post hoc pairwise comparisons showed that recipient-distant scores (M=4.20, SD=1.12) were significantly different from actor-recent (M=2.85, SD=1.57), and both vicarious memory types (recent, M=2.95, SD=1.39; distant, M=3.00, SD=1.38). Actor-distant (M=3.60, SD=1.47) and recipient-recent scores (M=3.55, SD=1.32) did not significantly differ from any of the other memory type scores and actor-recent scores (M=2.85, SD=1.57) did not significantly differ from either vicarious memory type scores.

After assuming sphericity (X^2(14)=11.18, p=.676, an ANOVA showed statistically significant results for this memory prepares me to deal with an emotion I might have in the future, F(5,95)=2.71, p<.05. . Post hoc pairwise comparisons showed that recipient-distant scores (M=4.20, SD=1.12) were significantly different from actor-recent (M=2.85, SD=1.57), and both vicarious memory types (recent, M=2.95, SD=1.39; distant, M=3.00, SD=1.38). Actor-distant (M=3.60, SD=1.47) and recipient-recent scores (M=3.55, SD=1.32) did not significantly differ from any of the other memory type scores and actor-recent scores did not significantly differ from either vicarious memory type scores.
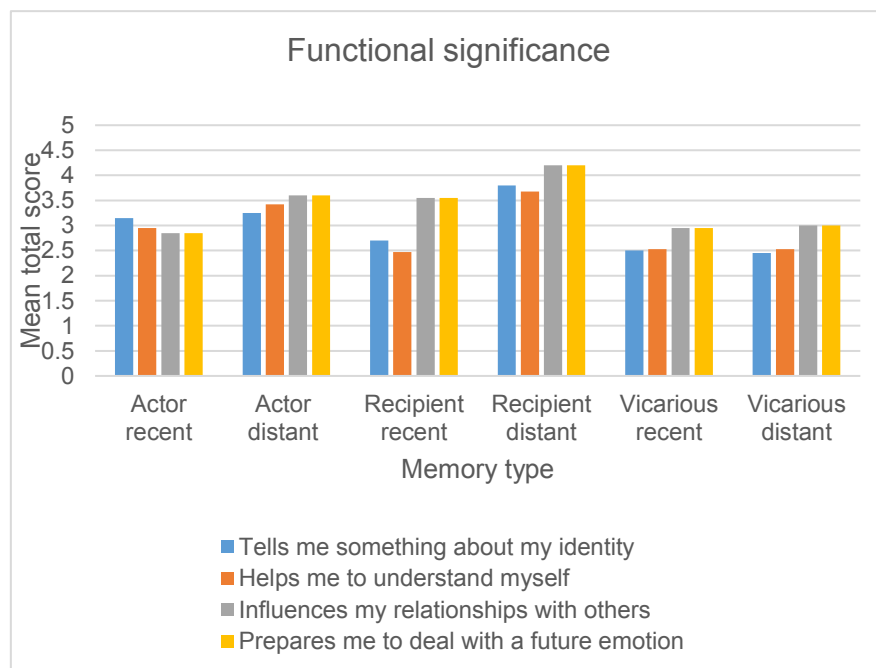

Figure 8: Mean score of each rating addressing the functional significance of the memory for the six different memory types; actor-recent, actor-distant, recipient-recent, recipient-distant, vicarious-recent and vicarious-distant.

4. DISCUSSION

This study is the first of its kind to examine the concept of vicarious and personal autobiographical memories of lying as an everyday behaviour. The study aimed to investigate the differences between the influence of 3 memory types; actor, recipient and vicarious on self-identity when recalling memories of lying as well as addressing the phenomenological and functional qualities of the memories. Four main hypotheses were established based on the existing research in three domains; autobiographical memory, morality and vicarious memory. Firstly, personal events in which the participant had lied to someone (actor perspective), will be rated as less morally wrong and less negative than personal events where the participant had been lied to (recipient) as well as when a friend/family member had been lied to (vicarious memories). Secondly, it was expected that vicarious memories will be rated as less morally wrong and less negative than recipient memories where the participant had been lied to. Thirdly, it was expected that for personal memories in the actor perspective, participants would rate themselves as more similar to themselves now than the distant memories and subsequently the recent memories would be rated as less morally wrong and less negative than the distant memories. Finally, vicarious memory ratings for phenomenological and functional qualities were expected to closely resemble personal memories but at a lower intensity.

In addition to analysis of the ratings, content analysis showed similarity in the major themes for actor and recipient memories of lying for example, many recollections focused on lying to get out of work/plans in general. Furthermore, a commonly reoccurring theme amongst the vicarious recollections was that of a friend or family member being lied to about a partner committing adultery.

Results showed that retrieval difficulty appeared to be fairly similar across all memory types (See *figure 3*) although mean scores suggest recent memories were slightly easier than distant memories to recall for each condition. Recipient memories appeared to be slightly easier to retrieve than the other memory types. Consistent with the expectations, both recent and distant memories of events where the individual committed the lie (actor) were rated as less morally wrong than memories where the lie was told to the participant (recipient) as well as when the lie was told to a friend or family member (vicarious), however, only in the distant conditions. Similarly, participants rated the events where they committed the lie (actor) as less negative than when the lie was told to a friend or family member (vicarious) and events where the lie was told to the participant (recipient), but only in the distant condition.

Research in the field of autobiographical memory suggests that recollections of events from the past are susceptible to bias and distortions which serve a self-enhancement and self-protection function (Alicke & Govorun, 2005; Ross, 1989). Therefore, consistent with existing research demonstrating that individuals perceive themselves as more positive than they perceive other people (e.g.Conway, Singer &Tagini, 2004; D'Argembeau & Linden, 2008; Stanley et al, 2017), the current results indicate that for autobiographical memories of lying, people tend to recall events whereby they committed the act, as less morally wrong and less negative than events where someone else committed the act or where the act was committed toward a friend or family member. By viewing one's behaviours as somewhat superior and better than other's whether it be a family member or friend on the receiving end or the individual themselves (Alicke & Govorun, 2005), facilitates self-enhancement and also demonstrates consistency with the concept that moral laden events, in this case lying,

are paramount to the construction of the self-identity (Strohminger et al, 2017). Furthermore, based on the current findings we can infer that people are either susceptible to memory distortions and reconstructions that support a positive self-image, or we make a social comparison and are motivated to consciously remember events that support a more positive self-image than for others. Research has suggested that there's a multitude of variables that may play a role in the way people perceive the severity of an aversive behaviour such as lying. Knapp and Comadena (1979, as cited in Bryant, 2008) suggested that individual's judge a lie based on the motivation of the person lying, the extent to which the person lying was aware of their actions and finally the effects that lying would have on the people involved. It would seem logical for a person who is recalling a memory of themselves lying to someone, to perceive the severity of the lie and subsequently the morality and negativity as less aversive in order to support their positive self-image which again, supports self-enhancement. For example, for the actor memories, research suggests that we self-enhance to maintain a positive identity (e.g. Stanley et al 2017) and so there is potentiality for us to remember and perceive actor memories of lies as less severe in order to support a positive self-identity. Our findings support the notion of self-enhancement however, future research could focus on exploring the process involved when an individual subjectively judges the severity of their own behaviours compared to when they judge other people's behaviours.

Following on from this, the mean perceived morality (see *Figure 1*) and mean perceived valence (see *figure 2*) ratings are of particular interest when looking at vicarious memories. It was expected that vicarious memories where the participant was told about a time a friend or family member was lied to, would closely resemble recipient ratings where the participant was directly lied to, but at lower level. However, mean ratings show that vicarious memories were actually rated as slightly more morally wrong. This closely relates to the content analysis which shows what could be perceived as more serious and aversive recollections for vicarious memories e.g. a friend or family member being cheated on and lied to about it, compared to both types of personal memories where the themes seemed to be of a more trivial and less serious nature. This finding could be explained in terms of the types of lies and their consequences. Bryant's (2008) findings showed that people described white lies as "lacking malicious motives and generally acceptable to use", and gray lies were described as "justifiable". We can infer from the current findings, that the recollections of more trivial lies for personal memories in the actor perspective could be due to the individual's belief that their behaviour was generally acceptable and therefore posed no detrimental effect to their self-identity, again maintaining a positive self-view.

Furthermore, significant results showed that people perceive themselves as more similar to their current selves for the recent events compared to the distant events. However, in contrast with expected findings, temporal distance was found to have no particular main effect on scores for perceived morality, perceived valence and emotional intensity in the actor perspective. The current findings are therefore inconsistent with the temporal self-appraisal theory (Wilson & Ross, 2000) which suggests that we compare our present and past selves in order to perceive ourselves as improving over time. In the context of immoral actions, this theory would suggest that we perceive our past selves as worse than our current selves as this poses no threat to our positive self-image. The current findings support the notion of our perceived self progressively changing over time but show no evidence of us viewing our current selves as better. The results demonstrate inconsistent findings to

Escobedo & Adolphs (2010) whose findings gave support for temporal self-appraisal where participants showed to recall positively valenced memories as more recent than negatively valenced memories. Stanley et al (2017**)** also demonstrated support for temporal self-appraisal but for lying specifically and so the current findings are mostly inconstant with their results. Based on the previous research on temporal self-appraisal this particular finding was largely unexpected. It could be argued that this was due to the participant numbers not being large enough to show a significant effect. Additionally, the mean age of participants was 29 and because age was not a modulated factor, it could have extraneously influenced the results and produced a non-significant finding for perceived morality and valence for temporally distances. This could be explained by Suls and Mullen (1984) who suggested that comparisons to our former selves are a lot less frequent than comparisons to others throughout life. They suggested that during periods of development i.e. childhood (3-5yrs) and old age (65+) we tend to use temporal comparisons and so during the period of young adulthood (Suls and Mullen, 1982, as cited in Wilson and Ross, 2000), social comparison is preferred. Based on the mean age of the participants in the current study, the preference for social comparisons for that age group could have potentially created the non-significant finding for temporal self-appraisal. In order for age to be modulated, future research should focus on testing temporal bias for memories of immoral actions on specific age groups in order to gain a wider understanding of this phenomena.

Finally, as predicted, phenomenological ratings for emotion, vividness and mental time travel were similar across all memory types. However, the ratings were highest for personal memories where the participant was being lied to (recipient) followed by ratings for vicarious memories which bear a very similar resemblance. Participants showed to have less mental time travel, less vivid imagery and less emotional intensity when trying to recall memories of times they have lied to someone (actor). Moreover, participant ratings also indicated that vicarious memories of lying hold many of the same functional qualities as the two types of personal memories (actor and recipient), but as expected, at a lower intensity. These results are consistent with Pillemer et al's (2015) findings which demonstrated a close resemblance between functional and phenomenological qualities of personal and vicarious memories. Furthermore, Lind & Thomsen (2018) conducted a very recent study that provided supporting evidence for the influence of vicarious life stories (which depend on autobiographical memory) on an individual's self-identity of which the current findings are consistent with. Moreover, the findings suggests that current models of autobiographical memory such as Conway & Pleydell-Pearce's (2000) Self Memory System are flawed in the sense they do not account for vicarious autobiographical memories and as a result can be perceived as too restrictive. Although the preliminary study only addresses a small fragment of questions regarding the phenomenological and functions properties of personal and vicarious memories of lying, they certainly establish the potential significance.

Despite the current study providing relevant and important findings for personal and vicarious autobiographical memories of lying, limitations are evident. The main limitation, is that of the small samples size. This reduces the ecological validity of the results as it may not be an appropriate representation of the wider population. This creates a gap for further research to study a larger sample in order to validate the current findings and hopefully produce results that can be transferred onto a wider scope of the population. Another limitation to consider is the self-report nature of the

questionnaire and so it is important to identify the potential possibility that not all participants were truthful in their responses, especially when recalling memories of times they'd lied to someone as these memories could be susceptible to distortions (Alicke & Govurun, 2005). Another limiting factor to acknowledge is the repetitiveness of the questionnaire's structure. The memory cues and associated ratings were repeated for all six memory types and despite Qualtrics.com counterbalancing the order in which they were presented to the participant, it could be true that participants experienced respondent fatigue. This may be the reason not all participants were able to complete the questionnaire fully and could reduce the internal and external validity for the completed responses. Moreover, it is important to identify the limitations that come as a result of using a 5-point Likert scale to quantify the true thoughts and feelings of the participant. It is a real possibility that responses could've been greatly influenced by previous questions, causing participants to consistently pick the same answer. In the real world, attitudes, perceptions and beliefs are not refined to a Likert scale and so the methodology is reductionist in terms of explaining human behaviour.

The present study's findings offer a significant addition to the growing literature on the effects of remembering autobiographical experiences of immoral actions on the perception of one's self-identity by applying the phenomena to vicarious memories. The findings show that participants perceive their own immoral actions as less morally wrong and less negative than recipient lies as well as vicarious lies. This gives the individual a sense of feeling better than others when it comes down to moral transgressions and therefore provides a self-enhancing effect. In conclusion, the current findings offer supporting evidence for the concept of people perceiving themselves as better than others when recalling situations of lying. Additionally, the results contribute important novel findings to the field of vicarious memories by expanding existing research to that of specific behaviours i.e. lying. These findings indicate that vicarious memory plays an important role in the construction of the self when one recalls a time that either a friend or family member has been lied to, even when the immoral action did not directly involve the individual. Overall, the results of the current study provide a solid platform for further research into vicarious and personal autobiographical memories and morality/immorality.

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