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Adopting a fictitious autobiography: fabrication inflation or deflation?

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ABSTRACT

In the present experiment, we examined whether adopting a fictitious biography would make participants believe in this autobiography. Participants were split up into two conditions: forced confabulation condition and control condition. The forced confabulation condition received a snippet with the fake biography and had to adopt it through several methods (i.e., method acting, journaling, and convincing experimenters in an interview) over an extended period of time. The control condition was told that they partook in an experiment about personal childhood memories. Before, during and after lying participants completed four Life Event Inventories (LEI). Results revealed that after coming forward with the truth participants did not increase nor decrease their belief for the lied about events. Additionally, even after a one-year delay, we found no evidence for either effect. Our findings suggest that more extreme forms of fabrication do not make people believe in their lies.

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Can we believe in our own lies? This question can be raised when reading the story of Joseph Hirt. For many years he shared his experience of being captured by the Nazis, escaping from Auschwitz, and meeting track and field star Jesse Owens. However, in 2016, a history teacher named Andrew Reid revealed evidence contradicting his story, leading Joseph Hirt to admit it was all a lie (Yuhas, 2016). According to himself, his intentions were to preserve the truth of the horrendous events that occurred during World War II. However, what happened to his own truth after pretending to be someone he was not? Adopting a fictitious autobiographical character implies that you have to (continuously) lie to yourself and others. A critical question is what happens when someone ceases to lie and thus, abandons his/her fake character. Will remnants of this new character be spilled to the autobiographical memory of the person who previously lied? This is the crux of the present experiment.

It has been well documented that memory is malleable. A prime example is the formation of false memories. Research on false memory has, for example, revealed the relative ease by which people can create false memories spontaneously (Deese, 1959; Roediger & Mcdermott, 1995) or because of external suggestive pressure (Loftus, 2005). Recent research converges towards the idea that the act of lying can also make people believe that these lies truly occurred. According to some scholars (Otgaar & Baker, 2018; Vrij & Heaven, 1999), there are different

forms of lying ranging from simple lies, such as false denials, to more elaborate ones, such as fabrication. The aim of the current experiment was to examine the effect of fabrication on memory. More specifically, we were interested whether adopting a fake autobiography would make people believe in that autobiography. In the literature, there have been several research lines on how fabrication can affect memory.

Fabrication and memory

The act of fabrication requires that a person creates a credible false story that a recipient believes to be a truthful one. This act entails an extensive amount of cognitive resources as one has to simultaneously inhibit the correct memory while fabricating a new story (Christ et al., 2009). Ackil and Zaragoza (1998) developed the *forced confabulation paradigm* to examine the effects of fabrication on memory. In this paradigm, participants were shown a video (9-min clip from the movie “Looking for Miracles”) and following this, they were interviewed concerning details in the video. Participants were divided into two groups: the forced confabulation and control group. The forced confabulation group was instructed to answer all questions and to guess and confabulate a response if they did not know the answer, while the control group was instructed to avoid any guessing and only answer

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questions when they were certain they knew the answer. Importantly, some questions concerned details or events that did not appear in the video and hence, were false. After a one-week delay, all participants had to tell the truth. Participants in the forced confabulation group formed false memories for details that they fabricated during the interview.

In a follow-up study, participants were forced to fabricate entire fictitious events instead of specific details (Chrobak & Zaragoza, 2008). Specifically, the researchers forced participants to create elaborate false stories including people, locations, and actions not previously shown in the video. After an eight-week delay, it was again found that, participants who confabulated, produced false memories for their self-generated confabulations. In short, research has demonstrated that forced confabulation can lead to an increase in false memories (Ackil & Zaragoza, 1998, 2011; Chrobak & Zaragoza, 2008, 2013; Drivdahl & Zaragoza, 2001; Zaragoza et al., 2001).

Apart from the deteriorating effects of fabrication on memory, research has also examined whether fabrication affects the confidence or belief that an event took place. That is, creating an autobiographical memory implies that one first needs to believe that the event occurred. After this, when someone also recollects (i.e., presence of images, etc.) the event, an autobiographical memory has been established (Mazzoni et al., 2010).

Polage (2004, 2012) examined the effect of fabrication on the belief that certain autobiographical events took place. In her studies, participants indicated on the Life Events Inventory (LEI; Garry et al., 1996) whether or not certain events had happened to them before the age of 10. Following this initial questionnaire participants were instructed to convince others that certain non-experienced LEI events did occur to them. After a one-week delay, participants completed once again the LEI. The authors found that lying led to a decrease in participants' belief that these non-experienced events happened to them; an effect that has been known as *fabrication deflation* (Polage, 2004, 2012). According to Polage (2004), the Source Monitoring Framework can account for these findings (SMF; Johnson et al., 1993). Specifically, the SMF postulates that true memories entail more perceptual, affective, and contextual processes than imagined memories (e.g., false) which contain more cognitive operations. When true and imagined memories share similar characteristics, source memory confusion may arise, leading to imagined memories being experienced as true ones. Polage (2004) further argued that the cognitively demanding act of lying served as a strong cue of the source of the false event and hence, instead of impairing, enhances the ability to distinguish it from a truly happened event. Interestingly, a small percentage of participants (10–16%) showed the opposite effect, wherein belief for fabricated events increased after lying. This effect has been termed *fabrication inflation* (Polage, 2004). One of the explanations underlying fabrication inflation is that individual characteristics (e.g., high levels

of self-reported lying and greater discomfort caused by lying) increased participants' likelihood to believe their own lies (Polage, 2012). Moreover, as source monitoring abilities decreased fabrication inflation increased (Polage, 2012). Taken together, research has shown that the act of fabrication can impact the belief that an event occurred and can even lead to the production of false memories.

(Auto)biography and memory

Nourkova et al. (2004) examined whether writing about fictional characters would alter individuals' autobiographical memories. They first instructed participants to complete a LEI. After one-week, participants had to write a biographical story about a fictional character entailing 24 random events (e.g., found a ring with a precious stone) from the LEI as a guide for this narrative, followed by another LEI. Nourkova and colleagues (2004) found that participants started to believe that the fake biographical events truly happened to them after writing the fictional biography. Although interesting, the results are rather limited as in this study participants simply wrote a fictional story about someone else. Therefore, the current study will delve into the robustness of this result by administering a more elaborate inducement in the form of adopting a new autobiography.

The idea of adopting a new autobiography is closely related to an acting technique called "method acting" (Moore, 1984). In this technique, actors are instructed to evoke realistic emotions on stage drawing from their personal experience. Although some evidence suggests that method acting might have adverse effects on behaviour (Grandey, 2003), harmful effects of using such technique on mental health and memory distortion remain unknown (Richard, 2014). Techniques in (method) acting are comparable to imagination exercises which have shown to lead to false beliefs and false memories (Garry et al., 1996; Hyman & Pentland, 1996).

The primary interest of the current experiment was to examine whether fabrication inflation (or deflation) would be observed when the act of fabrication was more extreme (i.e., adopting a fictitious biography). To examine this, participants had to adopt a new autobiography using several method acting techniques. Furthermore, to examine the impact of lying on their belief ratings for their autobiographical memories, participants had to complete the LEI before, during, and after enactment of the fictitious character. According to the SMF, source memory errors occur when people create perceptual, affective, and contextual details for false events that are similar to real events (Johnson et al., 1993). Hence, we expected participants to increase their belief for the fabricated about biographical events after coming forward with the truth (fabrication inflation effect), similar to previous research (Nourkova et al., 2004; Polage, 2004, 2012). Additionally, prior studies have revealed that individual characteristics, such as high levels of self-reported lying

and greater discomfort caused by lying, were related to both fabrication inflation and memory distortion (Merckelbach et al., 2000; Polage, 2012). Hence, we administered the Self-Deception Questionnaire (SDQ; SDQ; Sackeim & Gur, 1979) and the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986) to examine whether the expected fabrication inflation effect was due to the extensive lying and not due to individual traits.

In addition, an exploratory aim of the current experiment was to examine the long-term effects of this type of lying on participants' belief for false autobiographical events. To examine this, we asked participants to complete another LEI approximately one year after participants adopted their fictitious character. According to the SMF (Johnson et al., 1993), we expected that the course of time will impair the ability to distinguish the source of the false event. Hence, due to time and the inducement of perceptual, affective, and contextual details, a long-term effect of belief in the false autobiographical events was expected.

Method

Participants

An a priori power analysis for repeated measures and between factors ANOVA regarding main effects was performed to identify the appropriate sample size. Using G*Power (Faul et al., 2009), with a power of 0.80 and a medium effect size ($f = 0.25$), a sample size of 86 participants was indicated. A total of 101 participants filled in the initial LEI pre-screening questionnaire. However, only 85 subjects qualified to take part in the experiment. Additionally, two participants were excluded for not filling out all of the items on certain questionnaires and four participants dropped out before completing the experiment. Hence, 79 participants were used for the analyses. Participants ranged from 18 to 44 years of age ($M = 23.4$, $SD = 4.6$), 76.5% of participants were female ($N = 65$) and one participant identified as "other". Participants received a five euro vouchers for their participation.

The experiment was approved by the Ethical Committee of the Faculty of Psychology and Neuroscience of Maastricht University (Reference number: Master 189_11_03_2018). Also, the experiment was preregistered on the Open Science Framework (OSF) and the materials and raw data are also available at the OSF (<https://osf.io/zm9hu/>).

Materials

Life Events Inventory

Participants completed a subset of the *Life Events Inventory* (LEI), similar to the one used by Garry et al. (1996), that asked them to rate on an 8-point Likert scale (1 = *definitely did happen*, 8 = *definitely did not happen*) the likelihood that a given event did or did not happen to them before the age of 12. Three critical items from this inventory were

selected as defining biographical features of the fictitious character and were chosen a priori to be analysed throughout the experiment (i.e., got stuck in a tree, baked your own birthday cake, and helped make cupcakes for a school bake sale) (see Appendix A). Those participants who filled two out of the three critical questions with a likelihood rating of 1 (= definitely did happen) were excluded from participating in the study, because it was impossible for their likelihood rating to increase in follow up sessions.

Autobiographical sketch

The following fake autobiography was presented in the acting condition:

Your name is Robin Miller, aged 23, and you went to Maastricht University for your bachelor, and are now continuing your studies doing an MBA (Master of Business Administration) at the Faculty of Business and Economics. Your dream is to run your very own business. You think that a charming bakery in Paris would be perfect, since you have always loved making patisseries and cakes and are quite good at it. You also work part time in a small local bakery café at the center of Maastricht, which is really quite bad as you are a big sweet-tooth. You have a younger brother, who used to follow you around when you were younger, and who took the blame many times for your pranks at home. You two are still very close.

The rest of the fictitious character's personality was developed by the participants themselves, using the method acting techniques given to them (see below). Due to the participants' demographic diversity, many of them were permitted to alter the age of the fictitious character, thus making their acting role more believable.

Method acting

Participants had to practice four method acting techniques derived from the Stanislavski System to immerse in their character (i.e., Magic If, emotional memory, motivation, and observation). The *Magic If* technique entails that the actor asks him/herself what if questions about their character (e.g., If I were in Batman's position, what would I do?). *Emotional memory* refers to the recollection of a personal and emotional memory to simulate the necessary emotions for the character in specific situations to appear more realistic (e.g., recollect a memory of losing a loved one to simulate emotions for when Batman loses his parents). *Motivation* refers to the thorough examination of one's character to realise why they behave and are a certain way (e.g., why does Batman not kill the criminals?). *Observation* involves observing behaviours of others in similar roles, lives, or situations to come across more in line with the character (e.g., looking at previous superhero movies to prepare yourself as Batman).

The dissociative experiences scale

The dissociative experience scale (DES; Bernstein & Putnam, 1986) is a 28-item questionnaire that measures the frequency of participants' dissociative experiences (e.g., how unsure they are that an experience occurred in

real-life or in a dream). Participants indicate on a 100 point scale (0 = not at all, 100 = very much) whether the described experiences happened to them. Previous studies have observed a link between participants scoring high on the DES and memory distortion (Merckelbach et al., 2000). Hence, to explore that the adoption of a fictitious biography was the driving factor for changes in the belief for autobiographical events from the LEI, we administered the DES (see Appendix B).

The self-deception questionnaire

The self-deception questionnaire (SDQ; Sackeim & Gur, 1979) is a 20-item questionnaire, that measures individual differences in their predispositions to engage in self-deceptive behaviour (see Appendix C). The items are rated in a 7-point Likert scale (1 = not at all, 7 = very much so), and only extreme ratings of one or two on each question are indicative of self-deceptive behaviour, the maximum score being 20 (Gudjonsson, 1990).

Journal

Participants in the forced confabulation condition were instructed to keep an event-contingent protocol (e.g., provide a self-report every time you get into character), in the form of a journal, during the first week of the experiment (Bolger et al., 2003). The control condition wrote personal childhood memories in the journal. Previous research has shown that journaling encourages participant engagement allowing for a better immersion into the fictitious biography (Meth, 2003). This journal consisted of reporting the thoughts and dimensions that arose during the performance of the method acting techniques.

Design and procedure

We adopted a 2 (Condition: forced confabulation vs. control) \times 4 (Time: Time 1 (T1) vs. T2 vs. T3 vs. T4) mixed model design with time being the within-subjects variable. The dependent variable were participants' scores on the LEI critical items. Participants were randomly assigned to the different conditions.

The first LEI (i.e., T1) was administered at the pre-screening phase. Based on the LEI scores, participants were qualified to take part in the study. Those in the confabulation group were given the instructions to convince other people that they were someone else. The control group, instead, was told that they were taking part in a study on personal childhood experiences and to talk to others about their childhood experiences.

Participants in the confabulation condition were presented with the fictional character profile and a snippet of an event in that character's life (Appendix D). The profile included information that was highly related to two critical items on the LEI (i.e., baked your own birthday cake and helped make cupcakes for a school bake sale). However, participants were not told to explicitly lie about these two critical items. The third critical item (i.e., got

stuck in a tree) was part of the snippet and participants were instructed to lie about this critical event. Hence, belief in the critical LEI items were expected to increase due to specific instructions to lie and increased association between the fictitious biography and the critical items. Subsequently, they were asked to participate in a hot-seating activity, a drama strategy aimed to practice answering questions from the audience whilst in character. While doing the hot-seating activity, participants also engaged in a variety of Stanislavsky's method acting techniques, namely the Magic If and Imagination techniques. Using these acting methods enabled participants to create an empathetic connection to their character and engage in forced confabulation. Participants continued to engage in these acting method techniques individually every day for one week. By contrast, the control condition was instructed to write down their own personal childhood memories in a journal every day for one week.

The second LEI (i.e., T2) was sent to participants of each condition after one week, via email, consisting of the same questions ordered differently. Participants in the confabulation condition had to answer in accordance to their fictional character while the control condition responded honestly. Next, participants were given a break of approximately one week without acting or journal writing.

Subsequently, after one more week, the forced confabulation condition took part in an interview to convince another experimenter (a confederate) that they were that character. During the interview, a confederate, unbeknownst to participants, was asked to conduct a series of questions about the participant's childhood memories (Appendix E). Participants in the control condition were told that they would be interviewed about personal childhood memories. Upon completion of the interview, the third LEI (i.e., T3) was administered to the participants. Again, participants in the confabulation condition had to answer in accordance to their fictional character while the control condition responded honestly. Consecutively, a debriefing was conducted along with a final LEI (i.e., T4) with clear instructions to answer the questions as themselves and not as their characters.

Approximately one year after completing the experiment participants were contacted to participate once more in a final LEI 5. The LEI 5 was sent as an online questionnaire via Qualtrics.

Results

Life Event Inventories (Time 1–4)

Statistical analyses were conducted between the forced confabulation condition and the control condition for the Life Event Inventories (LEI). The analyses were conducted using the mean scores across the three critical items of the LEI's. A 2 (Condition: forced confabulation vs. control) \times 4 (Time: T1 vs. T2 vs. T3 vs. T4) repeated measures ANOVA with a Bonferroni adjustment showed a statistically

Table 1. Means and standard deviations for the four Life Event Inventories.

	Forced confabulation (N = 40)		Control (N = 39)	
	M	SD	M	SD
Life Event Inventory 1	5.73	1.65	5.93	1.79
Life Event Inventory 2	4.80	2.22	5.41	1.81
Life Event Inventory 3	3.61	2.14	5.54	1.70
Life Event Inventory 4	5.82	1.96	5.61	1.94

Note. Means and standard deviations described are the averages across the three critical events.

significant Condition \times Time interaction, $F(3,231) = 14.87$, $p < .001$, $\eta_p^2 = .16$. While the main effect of Time was statistically significant, $F(3,231) = 23.5$, $p < .001$, $\eta_p^2 = .23$, the main effect of Condition was not, $F(1,77) = 2.8$, $p = .097$, $\eta_p^2 = .035$. Simple main effect analyses revealed a statistically significant effect for condition for the third LEI, $F(1,77) = 19.63$, $p < .01$, $\eta_p^2 = .20$, but not for the first LEI, $F(1,77) = 0.26$, $p = 0.61$, nor the second LEI, $F(1,77) = 1.78$, $p = .19$, $\eta_p^2 = .022$, nor the fourth LEI, $F(1,77) = .23$, $p = .63$, $\eta_p^2 = .0030$ (see Table 1 for means and SDs). These analyses showed that adoption of the fictional biography was induced at the third moment the LEI had to be completed. Specifically, at Time 3, the forced confabulation condition ($M = 3.61$, $SD = 2.14$) had higher belief ratings in the three critical LEI events compared with the control condition ($M = 5.54$, $SD = 1.70$). However, at the moment of forthcoming with the truth (i.e., LEI 4) no statistically significant difference was found between the forced confabulation condition ($M = 5.81$, $SD = 1.96$) and the control condition ($M = 5.61$, $SD = 1.95$) (see Figure 1).

Additionally, a Welch's independent sample t-test for the LEI 4 showed no statistically significant difference in belief ratings for the critical LEI events between the

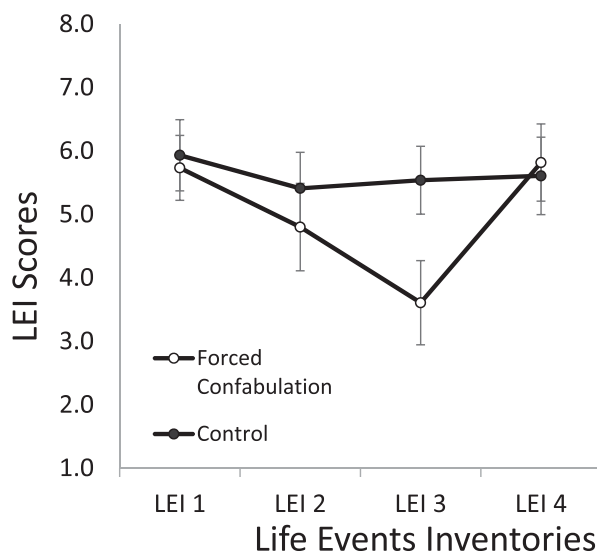


Figure 1. LEI scores across time for the forced confabulation and control condition (Error bars stand for 95% Confidence interval for the mean). Scores range from 1 (= definitely did happen) to 8 (= definitely did not happen).

forced confabulation condition ($M = 5.82$, $SD = 1.96$) and the control condition ($M = 5.61$, $SD = 1.94$), $t(77) = .48$, $p = 0.63$, $d = .11$. A Bayes Factor (BF) was also calculated and we found a $BF_{01} = 3.877$ indicating moderate evidence for the null hypothesis. Assuming equal possibility for the absence and presence of an effect with a Bayes factor of $BF_{01} = 3.877$ yielded a 79% posterior probability in support for H_0 . However, previous research (Nourkova et al., 2004; Polage, 2004, 2012, 2018) revealed that a fabrication inflation effect does arise. Taking this into account leads to stronger support for the null hypothesis.

Long-term effects of fabrication¹

An exploratory aim was to examine the long-term effects of lying on the belief for autobiographical events. Hence, after approximately one year, participants (forced confabulation $N = 21$ and control condition $N = 19$) completed another LEI. Analyses reported were for the three critical items of the LEI. A Welch's independent sample t-test showed no statistically significant difference in belief ratings for the critical LEI events between the forced confabulation condition ($M = 5.64$, $SD = 1.94$) and the control condition ($M = 5.65$, $SD = 1.61$), $t(38) = .025$, $p = 0.98$, $d = .008$. A Bayes Factor (BF) was also calculated and we found a $BF_{01} = 3.234$ indicating moderate evidence for the null hypothesis. Assuming equal possibility for the absence and presence of an effect with a Bayes factor of $BF_{01} = 3.234$ yielded a 75% posterior probability in support for H_0 . However, previous research (Nourkova et al., 2004; Polage, 2004, 2012, 2018) revealed that a fabrication inflation effect does arise. Taking this into account leads to stronger support for the null hypothesis.

Fabrication inflation

Statistical analyses were conducted to establish whether meaningful changes in belief occurred. We defined a meaningful change when participants changed their belief from "did not happen" (5-8 on the 8-point Likert scale) to "did happen" (1-4 on the 8-point Likert scale). Our analyses focused on whether these changes in belief for autobiographical events occurred between LEI 1 (pre-fabrication) and LEI 4 (post debriefing). Our results showed that only one participant in the forced confabulation condition and two participants in the control condition made this meaningful change.

Additionally, we examined whether a fabrication inflation effect was detected based on the analyses conducted by Polage (2004). That study revealed that a subset of participants (10–16%) increased their belief maximally on the LEI for the fabricated about event. Our results showed that 37.5% (15/40) of the participants in the forced confabulation condition increased their belief for each critical item (see Table 2). In the control condition 47.7% (19/39) of participants increased their belief across the three critical items. However, none of the participants in either condition increased their

Table 2. Number of participants that increased, decreased or had identical belief ratings between LEI 1 and LEI 4 for all critical items.

	Forced confabulation condition	Control condition	Maximum forced confabulation	Maximum control
Identical belief	8	7	0	0
Increased belief	17	13	5	2
Decreased belief	15	19	0	0
Total participants	40	39	5	2

Note. These are the number of participants that changed or did not change their belief from LEI 1 to LEI 4 for all critical items. Changes are defined as either a minimum of 1-point increase or decrease on the 8-point Likert scale. Last two columns are participants that changed their belief to the maximum (1 = definitely happened, 8 = definitely did not happen).

belief to the maximum for all three critical items. Examining the individual critical items revealed that there are participants who increase their belief to the maximum (1 = *definitely did happen*) (see Table 3). For the first critical item (i.e., got stuck in a tree), 5% (2/40) of participants in the forced confabulation condition increased their belief to the maximum whereas 2.6% (1/39) of participants in the control condition increased their belief to the maximum. For the second (i.e., baked your own birthday cake) critical item, 2.5% (1/40) of

Table 3. Number of participants that increased, decreased or had identical belief ratings between LEI 1 and LEI 4 for individual critical items.

	Forced confabulation condition	Control condition	Maximum forced confabulation	Maximum control
<i>Got stuck in a tree</i>				
Identical belief	24	21	N/A	N/A
Increased belief	9	7	4	6
Decreased belief	7	11	1	3
Total participants	40	39	5	9
<i>Baked your own birthday cake</i>				
Identical belief	17	14	N/A	N/A
Increased belief	9	9	6	5
Decreased belief	14	16	1	4
Total participants	40	39	7	9
<i>Helped make cupcakes for a school bake sale</i>				
Identical belief	17	19	N/A	N/A
Increased belief	12	7	5	4
Decreased belief	11	13	3	1
Total participants	40	39	8	5

Note. These are the number of participants that changed or did not change their belief from LEI 1 to LEI 4 for the three individual critical items. Changes are defined as either a minimum of 1-point increase or decrease on the 8-point Likert scale. Last two columns are participants that changed their belief to the maximum (1 = definitely happened, 8 = definitely did not happen).

Table 4. Fabrication inflation percentages within the forced confabulation condition.

Life Events Inventory critical item	Forced confabulation item	Control item	Forced confabulation item extreme	Control item extreme
1	17.5%	21.3%	2.5%	7.7%
2	35%	27.5%	2.5%	10%
3	27.5%	13.5%	7.5%	2.7%

Note. Percentages in the first two columns indicate an increase in belief from the Life Events Inventory 1 to the Life Events Inventory 4. Last two columns indicate the percentages of participants that increased their belief to the maximum (1 = definitely did happen).

participants in the forced confabulation condition increased their belief to the maximum whereas 12.8% (5/39) of participants in the control condition increased their belief to the maximum. For the third (i.e., helped make cupcakes for a school bake sale), critical item 7.5% (3/40) of participants in the forced confabulation condition increased their belief to the maximum whereas 2.6% (1/39) of participants in the control condition increased their belief to the maximum.

Additionally, we analysed the fabrication inflation effect within the forced confabulation condition between the three critical fabricated items and corresponding control items, as done by Polage (2004). Control items were carefully selected from LEI 1 for each critical item and were based on the scores on the initial LEI of each participant (T1). Control items either had identical LEI scores compared to the critical item or differed only by 1. Data of subjects that did not meet these requirements were excluded. Analyses on the individual critical items and corresponding control items were conducted (see Table 4)

The results showed that 17.5% (7/40) of participants increased their belief for the first fabricated item. 23.1% (9/39) of participants increased their belief for the corresponding control item. Moreover, 2.5% (1/40) of participants increased their belief to the maximum for the first fabricated item. However, 7.7% (3/39) of participants also increased their belief to the maximum for the corresponding control item. Results for the second fabricated item indicated that 35% (14/40) of participants increased their belief in the second fabricated item whereas 27.5% (11/40) increased their belief for the control item. 2.5% (1/40) of participants increased their belief to the maximum for the second fabricated item and 10% (4/40) of participants increased their belief to the maximum for the corresponding control item. For the last fabricated item, 27.5% (11/40) of participants increased their belief for this item. 13.5% (5/37) of participants increased their belief for the corresponding control item. 7.5% (3/40) of participants increased their belief to the maximum for the third fabricated item whereas 2.7% (1/37) of participants increased their belief to the maximum for the corresponding control item.

Fabrication deflation

Statistical analyses were conducted to establish whether meaningful changes in belief occurred. We defined a

meaningful change when participants changed their belief from “did happen” (1–4 on the 8-point Likert scale) to “did not happen” (5–8 on the 8-point Likert scale). Our analyses were focused on whether these changes in belief for autobiographical events occurred between LEI 1 (pre-fabrication) and LEI 4 (post debriefing). Our results showed that only one participant in the forced confabulation condition and one participant in the control condition made this meaningful change.

Additionally we examined whether a fabrication deflation effect was detected following the analyses by Polage (2004). That study showed that a subset of participants (40–48%) decreased their belief maximally for the fabricated about event. Results showed that 42.5% (17/40) of the participants in the forced confabulation condition decreased their belief for each critical item. In the control condition 33.3% (13/39) of participants decreased their belief across the three critical items (see Table 2). 12.5% (5/40) of participants in the forced confabulation condition decreased their belief to the maximum across the three critical items, whereas 5.1% of participants in the control condition decreased their belief to the maximum across the three critical items (8 = *definitely did not happen*). For the individual questions, 27.5% (11/40) of participants in the forced confabulation condition decreased their belief to the maximum for the first critical item. 15.4% (6/39) of participants in the control condition decreased their belief to the maximum (see Table 3). For the second critical item, 30% (12/40) of participants in the forced confabulation condition decreased their belief to the maximum for the first critical item. 12.8% (5/39) of participants in the control condition decreased their belief to the maximum. For the third critical item, 17.5% (7/40) of participants in the forced confabulation condition decreased their belief to the maximum for the first critical item. 20.5% (8/39) of participants in the control condition decreased their belief to the maximum.

Additionally, we analysed the fabrication deflation effect within the forced confabulation condition between the three critical fabricated items and corresponding control items, as done by Polage (2004). Control items were equivalent to the fabrication inflation analysis. Analyses on the individual critical items and corresponding control items were conducted (see Table 5). The results showed that 22.5% (9/40) of participants decreased their

belief for the first fabricated item. 17.9% (7/39) of participants decreased their belief for the corresponding control item. 10% (4/40) of participants decreased their belief to the maximum for the first fabricated item. 15.4% (8/39) of participants decreased their belief to the maximum for the corresponding control item. Results showed that 22.5% (9/40) of participants decreased their belief for the second fabricated item and the corresponding control item. 15% (6/40) of participants decreased their belief to the maximum for the second fabricated item and 12.5% (5/40) of participants decreased their belief to the maximum for the corresponding control item. For the last fabricated item, 30% (12/40) of participants decreased their belief. 29.7% (11/37) of participants decreased their belief for the corresponding control item. 12.5% (5/40) of participants decreased their belief to the maximum for the third fabricated item whereas 10.8% (4/37) of participants decreased their belief to the maximum for the corresponding control item.

Self-deception questionnaire

A Pearson’s product-moment correlation was used to determine the relationship between the Self-Deception Questionnaires and scores on the Life Events Inventories. This correlation indicates whether scores on the LEI’s are a result of self-deceptive tendencies. No statistically significant correlation was found between the pre-screening LEI and the SDQ ($r(79) = .14, p = .22$), nor with the LEI2 and the SDQ ($r(79) = .20, p = .07$), nor with the LEI3 and the SDQ ($r(79) = .15, p = .19$), nor with the LEI4 and the SDQ ($r(79) = .12, p > .28$). Results showed that participants did not have self-deceptive traits explaining the scores on the LEI’s.

Dissociative experience scale

We used an additional Pearson’s product-moment correlation to examine the relationship between the Dissociative Experience Scale and scores on the Life Events Inventories. This correlation indicates whether scores on the LEI’s are a results of dissociative traits. No statistically significant correlation was found between the pre-screening LEI and the DES ($r(79) = .16, p = .17$), nor with the LEI2 and the DES ($r(79) = -.04, p = .73$), nor with the LEI3 and the DES ($r(79) = -.05, p = .68$), nor with the final LEI and the DES ($r(79) = .12, p = .28$). Results show that participants did not have dissociative traits explaining the scores on the LEI’s.

Discussion

The aim of this experiment was to examine whether belief for non-experienced autobiographical events would change after adopting a fictitious biography. To examine this, we forced participants to fabricate about biographical events through various methods (i.e., a snippet, method acting, journaling, and convincing an experimenter in an interview) for two weeks. During this period, we

Table 5. Fabrication deflation percentages within the forced confabulation condition.

Life Events Inventory critical item	Forced confabulation item	Control item	Forced confabulation item extreme	Control item extreme
1	22.5%	17.9%	10%	15.4%
2	22.5%	22.5%	15%	12.5%
3	30%	29.7%	12.5%	10.8%

Note. Percentages in the first two columns indicate a decrease in belief from the Life Events Inventory 1 to the Life Events Inventory 4. Last two columns indicate the percentages of participants that decreased their belief to the maximum (8 = *definitely did not happen*).

administered one LEI before lying, two LEI's during lying, and one LEI when coming forward with the truth, to assess the effects of lying on the belief for fake autobiographical events.

The current literature hinges towards the idea that fabricating about biographical events leads to fabrication inflation (Nourkova et al., 2004; Polage, 2004, 2012). Whereas previous research used forms of fabrication wherein participants had to solely convince others of their fictional biography (Polage, 2004, 2012) or write about one (Nourkova et al., 2004), we focused on a more extreme form of fabrication (i.e., adopting a fictitious biography). Based on preceding studies (Nourkova et al., 2004; Polage, 2004, 2012) we hypothesised that rigorously adopting a fictitious biography would stimulate the creation of perceptual, affective, and contextual details for the critical non-experienced LEI events. According to the SMF (Johnson et al., 1993), this would lead to increased source memory errors and thus reveal a fabrication inflation effect. Hence, in the present study participants were instructed to adopt the fictitious biography for an extended period of time. This strong and continued encouragement to embrace the fictitious biography was done to increase its ecological validity. Indeed, the results showed that participants successfully adopted the fictitious biography (LEI 3) after two weeks of fabricating. Nonetheless, in contrast to our hypothesis, when participants came forward with the truth (LEI 4) (see Figure 1), we found that this effect disappeared. This suggests that this type of lying does not make participants believe that fake autobiographical events were experienced by them. Moreover, our findings showed that even after a one-year delay participants were still capable of distinguishing the truth from the lie. This suggests that the participants did not start to believe in their own lies when using this form of self-deception.

We also examined whether there was a subset of participants that showed the fabrication inflation effect, such as found by Polage (2004). The pattern of fabrication inflation was mixed and inconsistent among items and participants (see Tables 2 and 3). Our findings indicated that more participants in the control condition (47.7%) increased their belief across the three critical items compared with the forced confabulation condition (37.5%). None of the participants increased their beliefs for all critical items. Our analyses on the *individual* critical items revealed that a similar number of participants in either condition increased their belief to the maximum (see Table 4). Although one could postulate that this means that for certain items a fabrication inflation effect was found, the counterargument is that this would only be convincing if only the forced confabulation group would evince fabrication inflation. This, however, was not what we found. Additionally, we examined whether *within* the forced confabulation condition the fabrication inflation effect was found when comparing the critical items to control items. Again, we found similar numbers of participants who increased their belief for the critical items and control

items. Moreover, the same was found for increasing the belief to the maximum. Hence, we did not find a subset of participants that showed a fabrication inflation effect as shown by Polage (2004).

One explanation for the absence of a convincing fabrication inflation effect can be that an extreme induction of a fictitious biography leads to a clear source memory for the lie. The consequence of this is that when instructed to repeatedly lie about evident false autobiographical events, through various methods, one might develop a clear memory that it is false. This is in contrast to our prediction wherein we expected perceptual, affective, and contextual details to be developed for the critical non-occurred LEI events. Nevertheless, in line with the SMF (Johnson et al., 1993), the stronger the cue for the lie, the more capable people are of separating the lie from the truth. Indeed, our results showed that belief for the critical fictitious events remained unaffected when eventually responding honestly. Even more, after a one-year delay, participants did not show any signs of fabrication inflation or deflation. Hence, our study points towards the idea that elaborated lies are accurately remembered which can help participants to distinguish them from truth.

An alternative explanation can be that the critical items of the current experiment were not personally relevant for the participants. Previous studies showed that self-relevant details can increase the formation of false memories (Desjardins & Scoboria, 2007; Wang et al., 2018). It is possible that the chosen critical items in the current experiment bore no relation to the self of the participants and hence did not increase their belief for these items. This means that either personal details were lacking (i.e., I got stuck in a tree and my best friend "name" watched me) and/or personal relevance was missing (i.e., I have never climbed a tree due to fear of heights). However, the latter is unlikely as this predicts a fabrication deflation effect or lowest belief scores on the initial LEI, which we found no evidence for. Future research should scrutinise whether adding self-relevant details will make people believe in false biographical events after lying substantially about them.

We also examined whether lying does not impair our memory but actually enhances it (Polage, 2004). We observed that more participants in the forced confabulation condition (42.5%) decreased their beliefs across all the fabricated critical events after coming forward with the truth, compared with the control condition (33.3%). However, when examining within the forced confabulation condition for the individual critical items compared with control items the differences were slim (see Table 2). A reason for this could be the initial low belief ratings for the critical events leaving limited room for statistical differences in belief to be detected ($M = 5.73$, $SD = 1.64$) (1 = definitely did happen, 8 = definitely did not happen).

A subsidiary aim of the current experiment was to explore the long-term effects of this type of fabrication on belief for autobiographical events. Following the SMF (Johnson et al., 1993), we predicted that the course of

time would impair the ability to correctly attribute the source of the lie. Previous research also revealed that the rate of decay for true and false memories are similar after a one-and-a-half year delay (Zhu et al., 2011). This suggests that if the participants in the current experiment had developed false memories because of adopting this fictitious biography, then these effects would have been observed after one-year delay. However, we did not find evidence for this. After one-year delay, participants in the forced confabulation and control condition did not show any statistically significant difference with respect to their beliefs for the critical LEI events. An explanation for those findings can be that the long-term effects for belief and recollection are different for autobiographical memories compared to the true and false memories formed via a misinformation paradigm used by Zhu and colleagues (Otgaar et al., 2017; Zhu et al., 2011). Although statistical power was reduced due to a limited amount of participants that responded ($N = 40$), the results lean towards the notion that there are no long-term effects of adopting fictitious biography on belief for autobiographical events.

A potential reason for the absence of a long term effect can be that participants were able to reject the false events through a memorability-based strategy (Ghetti, 2008; Ghetti & Alexander, 2004). This metamemory strategy assumes that depending on the plausibility, saliency, and memorability of an event, people are able to assess whether an event truly occurred. The critical items in the present study might have been regarded as having low-plausibility or high saliency. According to this strategy, this would increase the memorability of the events and hence, lead to the rejection of them. This implies that if these autobiographical events would have happened to the participants, they would have remembered them. If not, participants are capable of rejecting these false events, even after a year delay (Ghetti & Alexander, 2004).

In the present experiment, participants were not enforced to practice the method acting techniques neither did we request their journal entries. To determine whether the materials (i.e., method acting, journaling, convincing an experimenter) adequately induced the fictitious biography, we administered several LEI's throughout the study to measure changes in belief for the critical events. Although our results indicated that the used materials were successful in adopting the false biography (LEI 3), follow-up research could delve into whether practicing method acting techniques differently impacts individuals' belief for autobiographical events. Moreover, to further examine the generalisability of the current results, future studies could assess whether actual actors/actresses that are familiar with method acting techniques might show a fabrication inflation effect.

These results have practical implications for the legal field. In the courtroom people lie for several reasons (e.g., avoid culpability, feelings of shame, or appear innocent) (Depaulo et al., 1996; Lyon, 2007) and can include people pretending to be someone they are not. Of importance is

whether this type of lying contaminates the memory in such a way that it adversely affects the reliability of memory-related statements, which are heavily relied upon in the courtroom. Our experiment strongly suggests that pretending to be someone else does not contaminate memory for one's own identity.

In conclusion, our study shows that people do not tend to believe in their strongly induced lies concerning autobiographical events. This is in contrast with previous studies (Nourkova et al., 2004; Polage, 2004, 2012) and calls for caution in studies using weaker forms of fabrication. Theoretically, the results are in line with the SMF (Johnson et al., 1993) wherein source confusion is prevented due to the intense form of lying serves as a strong reference for the source of the lie. Although research has shown that mild forms of self-generated fabrication can contaminate memory (Nourkova et al., 2004; Polage, 2004, 2012), our experiment suggests that more extreme forms of fabrication are less likely to be believed.

Note

1. Analysis on the long-term effects of fabrication was not preregistered but was deemed interesting after data collection.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Appendices

Appendix A. Life Event Inventory

Life Events Inventory

Event

- Got in trouble for calling the police
- Got into a fist fight with another student
- Had a lifeguard pull you out of the water
- Broke your leg at the park
- Ran away from home
- *Got stuck in a tree
- Broke a window with a ball
- Got a classmate in trouble for something you did
- Did lots of outdoorsy activities
- *Baked your own birthday cake
- Got a concussion during a soccer match
- Went to a country you didn’t understand the language
- Won a giant stuffed animal at the fair
- Cut your own hair
- *Helped make cupcakes for a school bake sale
- Stole something from a candy shop
- Found money on the floor
- Had to get stitches at the emergency room
- Accidentally lit the oven on fire
- Drove into a lamppost with your bicycle

Note. *Critical items.

Appendix B. Dissociative experience scale

This questionnaire consists of twenty-eight questions about experiences that you may have in your daily life. We are interested in how often you have these experiences. It is important, however, that your answers show how often these experiences happen to you when you are not under the influence of alcohol or drugs. To answer the questions, please determine to what degree the experience described in the question applies to you and select the number to show what percentage of the time you have the experience. 100% means "always", 0% means "never" with 10% increments in between. This assessment is not intended to be a diagnosis. If you are concerned about your results in any way, please speak with a qualified health professional.

Never 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% Always

- (1) Some people have the experience of driving a car and suddenly realising that they don't remember what has happened during all or part of the trip. Select a number to show what percentage of the time this happens to you
- (2) Some people find that sometimes they are listening to someone talk and they suddenly realise that they did not hear all or part of what was said. Select a number to show what percentage of the time this happens to you
- (3) Some people have the experience of finding themselves in a place and having no idea how they got there. Select a number to show what percentage of the time this happens to you
- (4) Some people have the experience of finding themselves dressed in clothes that they don't remember putting on. Select a number to show what percentage of the time this happens to you
- (5) Some people have the experience of finding new things among their belongings that they do not remember buying. Select a number to show what percentage of the time this happens to you
- (6) Some people sometimes find that they are approached by people that they do not know who call them by another name or insist that they have met them before. Select a number to show what percentage of the time this happens to you
- (7) Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something as if they were looking at another person. Select a number to show what percentage of the time this happens to you
- (8) Some people are told that they sometimes do not recognise friends or family members. Select a number to show what percentage of the time this happens to you
- (9) Some people find that they have no memory for some important events in their lives (for example, a wedding or graduation). Select a number to show what percentage of the time this happens to you
- (10) Some people have the experience of being accused of lying when they do not think that they have lied. Select a number to show what percentage of the time this happens to you
- (11) Some people have the experience of looking in a mirror and not recognising themselves. Select a number to show what percentage of the time this happens to you
- (12) Some people sometimes have the experience of feeling that other people, objects, and the world around them are not real. Select a number to show what percentage of the time this happens to you
- (13) Some people sometimes have the experience of feeling that their body does not belong to them. Select a number to show what percentage of the time this happens to you
- (14) Some people have the experience of sometimes remembering a past event so vividly that they feel as if they were reliving that event. Select a number to show what percentage of the time this happens to you
- (15) Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them. Select a number to show what percentage of the time this happens to you
- (16) Some people have the experience of being in a familiar place but finding it strange and unfamiliar. Select a number to show what percentage of the time this happens to you
- (17) Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them. Select a number to show what percentage of the time this happens to you
- (18) Some people sometimes find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them. Select a number to show what percentage of the time this happens to you
- (19) Some people find that they are sometimes able to ignore pain. Select a number to show what percentage of the time this happens to you
- (20) Some people find that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time. Select a number to show what percentage of the time this happens to you
- (21) Some people sometimes find that when they are alone they talk out loud to themselves. Select a number to show what percentage of the time this happens to you
- (22) Some people find that in one situation they may act so differently compared with another situation that they feel almost as if they were different people. Select a number to show what percentage of the time this happens to you
- (23) Some people sometimes find that in certain situations they are able to do things with amazing ease and spontaneity that would usually be difficult for them (for example, sports, work, social situations, etc.). Select a number to show what percentage of the time this happens to you
- (24) Some people sometimes find that they cannot remember whether they have done something or have just thought about doing that thing (for example, not knowing whether they have just mailed a letter or have just thought about mailing it). Select a number to show what percentage of the time this happens to you
- (25) Some people find evidence that they have done things that they do not remember doing. Select a number to show what percentage of the time this happens to you
- (26) Some people sometimes find writings, drawings, or notes among their belongings that they must have done but cannot remember doing. Select a number to show what percentage of the time this happens to you
- (27) Some people find that they sometimes hear voices inside their head that tell them to do things or comment on things that they are doing. Select a number to show what percentage of the time this happens to you
- (28) Some people sometimes feel as if they are looking at the world through a fog so that people or objects appear far away or unclear. Select a number to show what percentage of the time this happens to you

Appendix C. Self-deception questionnaire

Questions	(Not at all)	1	2	3	4	5	6	7
	(Very much so)							
1. Have you ever felt hatred toward either of your parents?	1	2	3	4	5	6	7	
2. Do you ever feel guilty?	1	2	3	4	5	6	7	
3. Does every attractive person of the opposite sex turn you on?	1	2	3	4	5	6	7	
4. Have you ever felt like you wanted to kill somebody?	1	2	3	4	5	6	7	
5. Do you ever get angry?	1	2	3	4	5	6	7	
6. Do you ever have thoughts that you don't want other people to know that you have?	1	2	3	4	5	6	7	
7. Do you ever feel attracted to people of the same sex?	1	2	3	4	5	6	7	
8. Have you ever made a fool of yourself?	1	2	3	4	5	6	7	
9. Are there things in your life that make you feel unhappy?	1	2	3	4	5	6	7	
10. Is it important to you that other people think highly of you?	1	2	3	4	5	6	7	
11. Would you like to know what other people think of you?	1	2	3	4	5	6	7	
12. Were your parents ever mean to you?	1	2	3	4	5	6	7	
13. Do you have any bad memories?	1	2	3	4	5	6	7	
14. Have you ever thought that your parents hated you?	1	2	3	4	5	6	7	
15. Do you have sexual fantasies?	1	2	3	4	5	6	7	
16. Have you ever been uncertain as to whether or not you are homosexual?	1	2	3	4	5	6	7	
17. Have you ever doubted your sexual adequacy?	1	2	3	4	5	6	7	
18. Have you ever enjoyed your bowel movements?	1	2	3	4	5	6	7	
19. Have you ever wanted to rape or be raped by someone?	1	2	3	4	5	6	7	
20. Have you ever thought of committing suicide in order to get back at someone?	1	2	3	4	5	6	7	

Appendix D. Childhood event snippet

You are 7 years old. One afternoon you go to the park with your parents and best friend Alex. It is a beautiful day; the playground is filled with other children playing and the ice-cream truck could be heard in the distance. A bunch of kids start running after the truck. As you're waiting impatiently for the swings to free up, you see an enormous Oak tree with low hanging branches. Alex and you start climbing the tree, at first it is easy, but the branches start getting thin at the top. You try to climb up one more branch, but your weight breaks it and nearly hits Alex. Now you are holding on with both arms and no footing. You shout to Alex to help you down as you can't hold on much longer, but Alex is not tall enough to reach you. You both call for your parents to come quickly, you panic, and your eyes start to tear up making your vision blurry. Your parents arrive just in time, and after getting Alex down, your dad has to climb up a few branches and is finally able to get to you and bring you to the ground.

Appendix E. Interview questions

- (1) What is your name?
 - Do you know why your parents named you _____?
- (2) Tell me a little bit about where you grew up.
- (3) Why did you move to Maastricht?
- (4) Tell me a little about yourself, favourite hobbies, work, ambitions?
- (5) Can you describe your parents to me?
- (6) Tell me about the earliest memory you have.
- (7) What was your favourite toy growing up?
- (8) Do you have any siblings?
 - Tell me a little about them.
- (9) Tell me about a family holiday you had as a child?
- (10) Did you ever have an imaginary friend?
 - Tell me a little bit more.
- (11) Did you have pets growing up?
- (12) Lastly, can you tell me about two childhood memories that come to your mind