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Confabulatory Introspection in Emerging Adults with Symptoms of Depression

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### Abstract

The current study examined the relationship between depressive symptoms and confabulatory introspection in emerging adults. Based on previous research showing that young adults with symptoms of obsessive-compulsive disorder and depression confabulate mental states (Aardema et al., 2014), it was hypothesized that emerging adults with depressive symptoms would engage in confabulatory introspection. It was also hypothesized that emerging adults with high levels of self-reflection and low levels of insight, respectively, would confabulate mental states.

Participants were asked to complete measures of depression, self-reflection and insight, and confabulatory introspection. The results supported the main hypothesis but did not support the other hypotheses. The findings of this study have important real-world applications. Cognitive interventions might need to take into account the introspective limitations of emerging adults with symptoms of depression in order to treat them more effectively.

### Confabulatory Introspection in Emerging Adults with Symptoms of Depression

Confabulatory introspection refers to the fabrication of explanations for one's decisions and choices. Aardema et al. (2014) found that confabulatory introspection is significantly related to symptoms of obsessive-compulsive disorder, depression, and schizotypy in young adults. Following this line of research, the purpose of this study was to examine whether or not emerging adults with depressive symptoms have a tendency to confabulate mental states. In addition, previous studies have shown that individuals with high levels of self-reflection and low levels of insight are more likely to exhibit symptoms of depression (Jones et al., 2009; Silvia & Phillips, 2011). Therefore, the present study also explored whether or not emerging adults that confabulate mental states have high levels of self-reflection and low levels of insight, respectively.

There is considerable evidence suggesting that people lack insight when it comes to thinking of reasons for their decisions, choices, and evaluations (Wilson & Dunn, 2003). Nisbett and Wilson (1977) reviewed several studies and found that people are capable of fabricating mental states, and that a fundamental constraint on self-knowledge is the inaccessibility of unconscious automatic processing to conscious awareness. In other words, individuals do not have access to many, if not most, of their mental processes, and therefore confabulate mental states. Moreover, these processes underline the limitations of awareness to the extent that it is possible to arrive at false conclusions about ourselves, even in the absence of any evidence to support it (Aardema & O'Connor, 2007).

Johansson and Hall (Hall et al., 2012; Johansson, Hall, Sikström, & Olson, 2005; Johansson et al., 2008) developed the choice blindness paradigm, which is the first objective assessment of confabulatory introspection. The term "choice blindness" refers to the failure to

detect a mismatch between intention and outcome when making decisions. In earlier studies on choice blindness, Johansson and colleagues (2005, 2008) presented participants with photographs of two women and asked them to select the one they found the most attractive. Unbeknownst to participants, researchers then swapped the photographs, showed them the photograph of the woman they did not choose, and asked them to justify their choice. Surprisingly, many participants did not notice the swap and confabulated reasons for the choice they had not made. Evidently, these participants had limited introspective access into the reasons for the choice they actually made.

Moore and Haggard (2006) have questioned the occurrence of choice blindness and confabulatory introspection for decisions and choices that hold personal relevance to the participants. They argued that it is unlikely participants deeply care whether or not a face is attractive. However, research demonstrating choice blindness in regard to moral judgments has surfaced in recent years. In a study by Hall et al. (2012), participants were asked to complete surveys in which they were asked to rate their level of agreement or disagreement with statements such as *“It is more important for a society to protect the personal integrity of its citizens than to promote their welfare.”* When they reviewed their survey, the statements had been reversed so they were now either agreeing or disagreeing with the opposite statements, but a large majority failed to notice the changes. When asked to provide reasons for their answers, more than half of the participants confabulated reasons for choices they did not make.

The concepts of self-reflection —the assessment of one’s thoughts, feelings, and behavior— and insight —the accuracy of understanding one’s thoughts, feelings, and behavior— might play an important role in confabulatory introspection. As mentioned before, studies have indicated that individuals with symptoms of depression tend to report high levels of self-

reflection and low levels of insight (Jones et al., 2009; Silvia & Phillips, 2011). Thus, it might be possible that in those individuals with depressive symptoms, excessive self-reflection becomes a negative or even a harmful act, subsequently decreasing insight. Ultimately, high levels of self-reflection and low levels of insight would reflect limited introspective access, leading individuals to confabulate mental states.

Whereas former studies on confabulatory introspection and depressive symptoms have focused on young adults (26-39 years old) (Aardema et al., 2014), the current study is the first to explore this relationship in an emerging adult population (18-25 years old). Emerging adulthood, the age period from late teens to mid-twenties, is considered one of the most stressful periods of life (Dornbusch, 2000). Emerging adults who pursue higher education not only have to overcome the difficulties that are part of the college experience, they also have to face the challenges appropriate to their developmental stage, such as formation of personal identity, initiation of romantic intimacy, and commitment to adult roles (Arnett, 2000). Not surprisingly, the changes that are associated with this age period can be very detrimental to their mental health (Cleary, Walter, & Jackson, 2011). For example, Sheets and Craighead (2014) showed that interpersonal stress, that being stress related to social life and family relationships, make emerging adults particularly susceptible to develop symptoms of depression.

Given the high prevalence of depressive symptoms among this population (Kuwabara et al., 2007), exploring whether or not emerging adults engage in confabulatory introspection might be the first step towards developing new cognitive interventions that are tailored to their deficits. Schieman and Van Gundy (2001) demonstrated that introspection can be an important psychological resource for individuals suffering from depression. However, as Aardema et al. (2014) noted, limited introspective access might render individuals incapable of benefiting from

introspection. Additionally, previous research has indicated that self-reflection and insight are essential to the process of self-directed behavior change, especially among clinical populations (Grant, 2001). Self-directed behavior change, which refers to the person as the agent of change, is key to successful treatment and recovery of several mental health conditions. Therefore, it is crucial to further explore this area of research because of its important implications for the treatment of depression.

Because the developmental challenges associated with emerging adulthood are very significant, exploring how the proportion of emerging adults who confabulated in this study compare to the proportion of young adults who confabulated in previous studies (Aardema et al., 2014) might be relevant. More importantly, the present study aimed to assess the relationship between confabulatory introspection and depressive symptoms in emerging adults. It was hypothesized that participants who reported depressive symptoms would be more likely to confabulate mental states. In addition, individuals with high levels of self-reflection were expected to engage in confabulatory introspection. Individuals with low levels of insight were also expected to confabulate mental states.

## **Method**

### **Participants**

The sample consisted of 59 undergraduate students (45 women) currently enrolled in a General Psychology course at Elizabethtown College, a private liberal arts college in Pennsylvania. Exclusion criteria included a history of clinical depression or use of antidepressants. Participants ranged in age from 18 to 22 years ( $M = 19.71$  years,  $SD = 1.17$  years). Those students who agreed to participate in the study were compensated for their time with credit toward their General Psychology course.

## Materials

### *The Center for Epidemiologic Studies Depression Scale*

The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) is a 20-item self-report scale that assesses the severity of depressive symptoms experienced within the past week. Responses are scored on a 4-point Likert-type scale ranging from 0 (*Rarely or None of the Time*) to 3 (*Most or All of the Time*). Examples of items on this scale include “I had trouble keeping my mind on what I was doing,” “I felt hopeful about the future,” and “I thought my life had been a failure.” Some items are reverse scored and then responses are averaged for a final score; the higher the score, the higher the frequency and severity of depressive symptoms.

### *Self-Reflection and Insight Scale*

The Self-Reflection and Insight Scale (Grant et al., 2002) is a 20-item self-report measure that assesses two factors. The self-reflection factor contains 12 items that assess a tendency to think and evaluate thoughts, feelings, and behavior. Sample items for self-reflection include “I don’t often think about my thoughts” and “I frequently examine my feelings.” This factor has two highly correlated facets — engagement in self-reflection and need for self-reflection. The insight factor has eight items that assess the clarity of understanding thoughts, feelings, and behavior. Examples of items for insight include “I am usually aware of my thoughts” and “I usually have a very clear idea about why I have behaved in a certain way.” Participants had to rate statements on a scale of 1 to 5, with 1 indicating strong disagreement and 5 indicating strong agreement. Mean scores were computed such that higher scores indicate greater self-reflection and insight.



*Choice Blindness Task*

The Choice Blindness Task (Aardema et al., 2014) is a validated paper and pencil method that assesses choice blindness and confabulatory introspection. First, participants were presented with a scenario intended to make the participant believe that an unfortunate event might have happened. The scenario included a detailed description of the circumstances of the possible accident. After reading the scenario, participants were asked to rate their level of agreement or disagreement with ten different statements. However, most of the statements were filler items with the exception of one item, which stated: “The lack of expression on people’s faces probably means nothing.” Responses were given on a 6-point scale ranging from disagreement to agreement.

Then, participants were asked to complete the aforementioned surveys (depression and self-reflection and insight scales) and the demographic form. In the meantime, the researcher left the room and altered one of the statements to its opposite direction. Specifically, the statement “The lack of expression on people’s faces probably means nothing” was substituted by “The lack of expression on people’s faces probably indicates shock.” Accordingly, a participant who originally agreed (a rating of 4 or higher) with the former statement has now agreed with the latter statement. On the contrary, a participant who initially disagreed (a rating of 3 or lower) with the former statement has now disagreed with the latter statement.

After the alteration, participants had to write down reasons for the choices they made on each of the items, including the altered choice. Choice blindness and confabulatory introspection occurred if participants provided reasons to support the altered choice, which represented a choice that they did not actually make. Conversely, choice blindness and confabulatory introspection did not occur if participants detected the alteration and attributed the error to

themselves (e.g., misreading the statement) or if they provided reasons for the choice they made instead of the altered one.

### **Procedure**

At the start of the sessions, participants were told that the surveys and task were part of a study on Introspection and State of Mind. They were provided with a consent form acknowledging that participation in the study was voluntary and were asked to sign the form. They completed the study via two pen-and-paper surveys, one evaluating the severity of depressive symptoms and the other assessing self-reflection and insight. Then they were asked to complete a Choice Blindness Task, which is an assessment of choice blindness and confabulatory introspection. In addition, the participants had to fill out a demographic form indicating their age, gender, and race/ethnicity. The surveys, the Choice Blindness Task, and the demographic form were individually administered and took approximately 20 minutes to be completed. At the end of the study, participants were debriefed as to the purpose of the study and thanked for their time.

### **Results**

An independent samples t-test was conducted to examine whether or not confabulatory introspection was related to symptoms of depression. In accordance with the main hypothesis, it showed that those who confabulated mental states had significantly higher levels of depressive symptoms ( $M = .87$ ,  $SD = .47$ ) than those who did not confabulate ( $M = .66$ ,  $SD = .31$ ),  $t(56.93) = -2.06$ ,  $p = .04$ . Importantly, Levene's Test indicated unequal variances ( $F = 5.94$ ,  $p = .02$ ), so degrees of freedom were adjusted from 57 to 56.93. It was also hypothesized that participants with high levels of self-reflection and participants with low levels of insight would confabulate mental states. However, t-tests showed that there were no differences in self-reflection scores

and in insight scores between those who engaged in confabulatory introspection and those who did not (all  $t$ s < 1.6, all  $p$ s > .12; See Table 1 for details). Thus, the data supported the first hypothesis but did not support the other two hypotheses.

### **Discussion**

Prior research has indicated that young adults with symptoms of obsessive-compulsive disorder, depression, and schizotypy have a tendency to confabulate mental states (Aardema et al., 2014). Given that emerging adulthood is considered one of the most distressing developmental stages (Dornsbusch, 2000), the present study examined whether or not emerging adults with symptoms of depression engage in confabulatory introspection. Consistent with past literature and the main hypothesis, the results indicated that emerging adults with symptoms of depression were more likely to confabulate mental states. The findings of this study are relevant to college counselors and other mental health professionals who work with an emerging adult population. When treating emerging adults with symptoms of depression, it might be important to assess, and if necessary address, their lack of introspective access. It is possible that tackling such deficit or limitation leads to better treatment outcomes.

Interestingly, the proportion of emerging adults who confabulated in this study, 36 out of 59 participants (61%), was slightly higher than the proportion of young adults who confabulated in a previous study by Aardema et al. (2014), 24 out of 43 participants (55%). Although there are many challenges associated with emerging adulthood, these numbers do not necessarily imply that developmental differences between these groups influence the occurrence of confabulation. Nevertheless, future studies need to further investigate if there are differences between these two developmental stages that might lead to confabulation.

Moreover, previous studies have shown that high levels of self-reflection and low levels of insight are related to symptoms of depression (Jones et al., 2009; Silvia & Phillips, 2011). Therefore, the current study also investigated whether or not emerging adults who confabulate mental states have high levels of self-reflection and low levels of insight. The data, however, did not support these hypotheses. That is to say, emerging adults who engaged in confabulatory introspection did not necessarily show high levels of self-reflection or low levels of insight.

The possibility of excessive self-reflection decreasing insight in emerging adults was previously contemplated. However, the data did not support this premise. Therefore, it might be that there are other mechanisms responsible for restricting introspective access. One potential candidate is rumination, which refers to the compulsively focused attention on the negative aspects (i.e., symptoms, causes, and consequences) of one's distress, as opposed to the positive ones (i.e., solutions). Rumination is considered a maladaptive form of self-reflection and has been extensively linked to depressive mood (see Nolen-Howksema, Wisco, & Lyubomirsky, 2008 for a review). The construct of self-reflection that was used in the present study was perhaps too comprehensive, which might have not only accounted for the negative consequences of self-reflection, but also the many benefits associated with it (Stein & Grant, 2014). Further research is necessary to investigate rumination, among other potential underlying mechanisms of confabulatory introspection in emerging adults with symptoms of depression.

There were a few considerable limitations to this study. First, some participants' open-ended responses in the Choice Blindness Task, in respect to the reasons for the choices they made, were slightly ambiguous. These responses were evaluated by a second rater in order to reach an agreement about the nature of the response (i.e., whether or not the participant confabulated). If there was no agreement between the raters, the data from that participant was

discarded, which only occurred twice. Although previous studies on confabulatory introspection have not regarded this as a concern (Aardema et al., 2014), a better approach could entail having multiple raters to examine all the responses and determine whether or not participants have confabulated. In addition, the generalizability of the findings is limited by the use of a non-clinical sample. Results require replication in clinical samples with heightened levels of symptoms of depression.

Finally, the current study provides preliminary information for a new area of investigation regarding insight and introspection in clinical psychology. As mentioned before, limited introspective access can hinder the effectiveness of treatment of depression (Aardema et al, 2014). The findings of the present study show that emerging adults with symptoms of depression have a tendency to engage in confabulatory introspection, indicating lack of insight into the reasons for the choices they make. Therefore, new cognitive interventions might want to address individuals' deficits, such as poor introspective access, in order to treat depression more effectively.

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Table 1

*Results of t-tests and Descriptive Statistics for Self-Reflection (Engagement and Need for Self-Reflection), Insight, and Depression by Confabulation*

Outcome	Group						95% CI for Mean Difference	t	df
	Confabulation			No Confabulation					
	M	SD	n	M	SD	n			
Engagement	3.68	.65	36	3.71	.64	23	-.31, .37	.18	57
Need	3.69	.60	36	3.67	.56	23	-.34, .29	-.16	57
Insight	2.71	1.32	36	3.16	1.16	23	-.05, .45	1.54	57
Depression	.87	.47	36	.66	.31	23	-.41, -.00	-2.06*	56.93

*Note.*

\*  $p < .05$ .