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Forget in a Flash: A Further Investigation of the Photo-Taking-Impairment Effect

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A photo-taking-impairment effect has been observed such that participants are less likely to remember objects they photograph than objects they only observe. According to the offloading hypothesis, taking photos allows people to offload organic memory onto the camera's prosthetic memory, which they can rely upon to "remember" for them. We tested this hypothesis by manipulating whether participants perceived photo-taking as capable of serving as a form of offloading. In Experiment 1, participants used the ephemeral photo application Snapchat. In Experiment 2, participants manually deleted photos after taking them. In both experiments, participants exhibited a significant photo-taking-impairment effect even though they did not expect to have access to the photos. In fact, the effect was just as large as when participants believed they would have access to the photos. These results suggest that offloading may not be the sole, or even primary, mechanism for the photo-taking-impairment effect.

General Audience Summary

Taking a photo can cause something to be less well remembered than if it is simply observed. This photo-taking-impairment effect has been explained by a cognitive offloading account such that when people take photos they come to rely on the camera to "remember" what was photographed for them, not bothering to remember it for themselves. Experiment 1 tested this hypothesis by using the ephemeral photo-messaging application Snapchat. Photos taken with Snapchat are not saved for future access, and thus an offloading account would seem to predict less impairment as a result of taking photos using Snapchat than as a result of using a traditional camera application because participants should not expect the camera to remember on their behalf. Contrary to this prediction, participants showed just as much impairment after taking photos using Snapchat as they did using a typical camera application. In Experiment 2 participants manually deleted photos after taking them. Again, a significant photo-taking-impairment effect was observed even though participants did not expect to have access to the photos. These results suggest that explicit offloading cannot fully account for the photo-taking-impairment effect. Instead, they are more consistent with the idea that photo-taking disrupts how people engage or encode the objects they are viewing, an effect that may have little to do with how photo-taking also has the potential to serve as a form of offloading.

Keywords: Photo-taking impairment, Offloading, Transactive memory, Snapchat

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“I used to carry a camera when I traveled, but almost never took pictures with it, and apologized when I returned home, until I realized that my reluctance to point and click was really a reluctance to line up and edit and frame whatever I was seeing or hearing or smelling. The fall of the morning sunlight against the glittering sea. The crinkled face of an old woman selling spices in the market. It was, I believe, an instinctive reluctance to remove myself from my experience, an experience that could only occur far from home and habit, where the rules as much as the landscape were unfamiliar. To photograph it was somehow to reduce and domesticate my experience and ultimately to kill it.”

Russel Banks, 2015

The widespread use of camera phones has made it easier than ever to capture, store, and share photographs, yet little is known about how photographing an experience influences memory of that experience. Photographs can serve as powerful cues for facilitating retrieval (Berry et al., 2007; Deocampo & Hudson, 2003; Hodges, Berry, & Wood, 2011; Loveday & Conway, 2011; St Jacques & Schacter, 2013), but what about the act of taking a photo itself? Does taking a photo make someone more or less likely to remember the experience being photographed?

People often report taking photos as a strategy for remembering information and life events (Chalfen, 1998; Harrison, 2002), and indeed there are many reasons to expect taking a photo to improve memory for the objects and experiences being photographed. Photo-taking can isolate an item from other items (Von Restorff, 1933; Wallace, 1965), for example, or lead to a deeper, more elaborate, or more variable encoding opportunity (Craig & Lockhart, 1972; Estes, 1950; Glendon, 1979; Nist & Hogrebe, 1987). As demonstrated by Henkel (2014), however, taking a photo can have the opposite effect, rendering photographed objects less well-remembered than observed objects.

Henkel's (2014) study involved participants going on a guided museum tour while they took photos of certain objects (art pieces) and observed others. Participants were later tested, without access to the camera, on what they saw. Henkel found that photographed objects were less well-remembered than observed objects, a phenomenon referred to as the photo-taking-impairment effect. Henkel speculated that the effect could be the result of offloading, with participants not needing to remember the photographed objects because they could safely assume that the camera was doing the remembering for them (Risko & Gilbert, 2016).

The offloading hypothesis of the photo-taking-impairment effect draws heavily from transactive memory theory (Wegner, 1987; Wegner, Giuliano, & Hertel, 1985). Couples tend to split the labor of remembering based on their relative ease of recall, for example, with each person strategically relying on the other to remember certain information (Wegner, Erber, & Raymond, 1991). Their shared memory system is called transactive memory. Transactive memories are not just shared among groups of people, but also between people and objects that can “remember”

(Ward, 2013). Taking notes (Eskritt & Ma, 2014), saving on a computer (Sparrow, Liu, & Wegner, 2011), or accessing the Internet (Ferguson, McLean, & Risko, 2015), for example, can create a transactive memory system reliant on the prosthetic memory of a notepad, computer, or Internet. This form of offloading is likely to have many benefits in that it allows individuals to focus on other tasks (Storm & Stone, 2015), but it can also make offloaded information less recallable in the future than it would have been otherwise when the transactive memory partner is not available (Sparrow et al., 2011). Henkel's (2014) photo-taking-impairment effect could be explained by participants offloading their memory onto the camera. Specifically, participants may have failed to remember the photographed objects because they relied on the camera's prosthetic memory instead of their own organic memories.

An alternative possibility is what we refer to as the attentional-disengagement hypothesis—the idea that when people take photos they disengage from the moment to handle the task of capturing the object or experience, thus leading them to encode it less deeply or elaborately than they would have otherwise. Recent work by Niforatos, Cinel, Mack, Langheinrich, and Ward (2017), for example, replicated the photo-taking-impairment effect, but only when participants manually took photos. Specifically, the effect was not observed when photos were taken automatically by a wearable camera. In other work, participants have also reported being somewhat aware of the experience that taking photos can cause them to become disengaged. Mols, Broekhuijsen, van den Hoven, Markopoulos, and Eggen (2015), for example, found that when asked to use various methods to document a trip, participants reported feeling more disengaged from the experience when taking photos relative to other recording strategies. Such disengagement could prompt participants to perform shallower encoding processes and make them more likely to miss or fail to encode visual details into memory—not only during the photo-taking experience itself, but also, perhaps, when participants continue to process and consolidate the experience into memory after photo-taking is complete. A critical assumption of the attentional-disengagement hypothesis is that encoding suffers automatically as a consequence of taking photos, and therefore that the photo-taking-impairment effect should not depend on whether the photographer considers the camera a reliable transactive memory partner.

The current study sought to extend the work of Henkel (2014) while more directly testing the offloading hypothesis. To do this, we employed a laboratory version of Henkel's paradigm (taking pictures of paintings on a computer screen) that included the two conditions employed by Henkel (camera vs. observe) as well as a third condition in which participants took photos but could not rely on the camera to “remember” for them. In this new condition, the camera did not function as an effective transactive memory partner and participants should therefore not have considered taking photos to serve as a form of offloading. According to the offloading hypothesis, if participants do not expect the camera to save the photos, then the photo-taking-impairment effect should be eliminated or greatly reduced. According to the attentional-disengagement hypothesis, however, taking photos

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