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The presence of your absence: A conditioning theory of grief

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ABSTRACT

I present a conditioning theory of grief. From conditioning research on appetitive disorders (e.g., addiction and binge eating), I borrow the concept cue-elicited craving. More precisely, the theory postulates that, throughout a life together, a variety of cues become associated with the presence of the loved one and that because of this these cues can trigger craving and (an action tendency for) searching for the deceased. Starting from this perspective, I additionally invoke extinction phenomena to explain the possible persistence of grief. Arguably, the theory has good heuristic value, because it allows to explain a variety of grief symptoms and to bring together existing knowledge in a unifying learning framework. In addition, the theory has good predictive value, because it opens the door to considering new research and treatment directions.

1. Introduction

Finn, a middle-aged male, lost his girlfriend about five years ago [1; prolonged grief]. Finn reports that, after the loss, he so intensely longed for her that it would make him "go crazy" [2; craving and frustration]. Only about one year ago, it got better, in the sense that since then he can be more or less at ease at home [3; extinction]. However, sometimes it is still as bad as when she just passed away. To give just a few examples, hearing a romantic song on the radio still makes him long for her, as does seeing somebody with the same hairstyle as hers. In addition, grief still overtakes him at times when he least expects it. Recent examples of this include a trip to the seaside (where he and his girlfriend used to go to relax) and a Christmas family gathering [4; (no) generalization of extinction]. He also broke down when having spaghetti, her favourite meal, at a restaurant [5; return of responding]. One of the reasons that Finn is looking for therapeutic help is that he recently lashed out at his mother for accidentally washing his girlfriend's pillow, an item that he cherished [6; evaluative conditioning and sign tracking], but has lost his girlfriend's scent because of the washing. Finn also mentions that he still regularly goes to the square where he and his girlfriend used to meet for lunch [7; habit]. In addition, he describes another recent incident that worried some people close to him. With a couple of friends, he went to the cinema to see a movie. After a vote, the group of friends decided on a movie that happened to be a sequel to a movie that he and his girlfriend had seen together. However, 15 min into the movie, Finn decided to leave and drove his car to the house of his girlfriend's parents (where he used to pick her up when they just started dating). He stayed in his car, parked in front of the house, reminiscing about his girlfriend for about two hours, before driving to his current home [8; Pavlovian-instrumental transfer]. His friends consider Finn's behaviour to be "abnormal", since it is happening so long after the loss. Finn does not know whether his behaviour is normal or not, but wonders whether it might mean that he and his girlfriend had a bond so special that most people cannot even begin to understand [9; catastrophizing].

Finn's name is fictitious, but his story as sketched in the above case study is real. Based on the description, he might suffer from prolonged grief (PG). This disorder is characterized by disabling symptoms for lengthy periods (according to the least stringent criterion for at least six months after the loss; Jordan & Litz, 2014), including intense craving and searching for the deceased, being constantly reminded of the deceased, and cherishing reminders of the deceased (Boelen, van den Hout, & van den Bout, 2006; Shear, 2015). Studies have estimated the prevalence to be 4-5% in the general population and 7-25% among bereaved individuals (Kersting, Brähler, Glaesmer, & Wagner, 2011; Newson, Boelen, Hek, Hofman, & Tiemeier, 2011). Despite comorbidity with depression and anxiety disorders in clinical samples (Simon et al., 2007), PG also occurs independently of these disorders, uniquely contributing to increased risk of morbidity and suicide, health problems such as myocardial infarction (cf. the proverbial broken heart), and overall reduced quality of life (Jordan & Litz, 2014; Shear, 2015; Shear et al., 2011; Stroebe, Schut, & Stroebe, 2007).

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) explicitly includes PG as a condition requiring further research. The decision to consider (persistent) grief behaviour as a pathology in need of diagnosis has not gone uncontested. Researchers have indeed demonstrated that diagnosis can lead to stigma (Eisma, 2018) and that current diagnostic

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criteria allow for a large amount of different symptom combinations, which decreases utility of the diagnosis for research and practice (Lenferink & Eisma, 2018).

This controversy notwithstanding, a better understanding of grief is obviously needed. Many myths surrounding grief are firmly entrenched in Western culture, for example the idea that successful grieving involves stages of reaction to loss (for a detailed discussion of a series of myths see Wortman & Silver, 1989; Wortman & Boerner, 2011). Knowledge of the mechanisms involved in the development and maintenance of grief is important for the early identification of those at risk for problematic grief and for the development of more effective care. Although cognitive behavioural therapy holds promise, studies have indeed shown that some of the current grief therapies are ineffective or even harming rather than helping (subgroups of) grieving individuals (Boelen, 2016; Dimidjian & Hollon, 2010; Neimeyer, 2000).

In this paper, I explore whether an associative learning framework may help us to explain grief behaviour and its possible persistence. Associative learning is a basic behavioural capacity shared by human and non-human animals alike and is defined as a change in behaviour caused by a co-occurrence of events (De Houwer, Barnes-Holmes, & Moors, 2013). The scientific study of associative learning was given a head start by Pavlov (1927) famous conditioning experiments in dogs. Since those experiments, the field has kept on evolving, leading to more refined experimental designs and theories (for a review see Haselgrove, 2016). But, however advanced this research field may have become, can it also serve to make sense of one's innermost reactions in response to the loss of a loved one? Below, I argue that associative learning theory can indeed go a long way in providing insight in some important aspects of grief. After introducing the theory, I will discuss the relation between this theory and existing theories about grief (for an elegant review of existing theories see Maccallum & Bryant, 2013).

2. Conditioning

An important building block of the proposed theory is appetitive conditioning. Before describing how appetitive conditioning may play a role in grief, I will describe the general concept. Studies on the topic of food craving and addiction have demonstrated that cues that have been paired with a desired outcome can come to elicit what is termed cueelicited craving: Intense longing for the substance that goes hand in hand with (an action tendency for) approach or search behaviour (Jansen, 1998; Zellner & Edwards, 2001). For example, in a laboratory paradigm developed by Van Gucht and colleagues, two serving trays are used as cues and eating a piece of chocolate is used as the desired outcome (e.g., Van Gucht, Baeyens, Vansteenwegen, Hermans, & Beckers, 2010; Van Gucht, Vansteenwegen, Beckers, & Van den Bergh, 2008; Van Gucht, Vansteenwegen, Van den Bergh, & Beckers, 2008). Both serving trays are shortly and alternately presented on a little table in front of participants before being taken away again. Crucially, while one of the trays is on the table, participants are always asked to eat a piece of chocolate, whereas they never get to eat chocolate when the other tray is on table. As a result, the serving tray paired with chocolate consumption, but not the other, typically comes to elicit craving for chocolate: People report longing for chocolate when seeing this tray. This tray also comes to elicit an action tendency for approach behaviour (as measured in a stimulus-response compatibility reaction time task; Van Gucht, Vansteenwegen, Van den Bergh et al., 2008). Such action tendency can be understood as a goal or inclination to act, but does not necessarily translate in an overt action (Moors, Boddez, & De Houwer, 2017). Similar results have been obtained in a laboratory paradigm in which nicotine rather than chocolate is used as a desired outcome (Thewissen, Snijders, Havermans, van den Hout, & Jansen, 2006; Thewissen, van den Hout, Havermans, & Jansen, 2005).

Taken together and making abstraction of specific laboratory paradigms, this type of findings shows that environmental cues paired with a desired outcome can make people crave for that outcome and can trigger (an action tendency to) searching behaviour. This abstract principle can be made more intuitive by applying it to daily life experiences that everybody will recognize. For example, this principle can help us understand why the smell of a waffle makes us crave eating a waffle and search for a waffle stand. Indeed, in such situation, the craving could be explained by the assumption that this smell (i.e., the cue) previously co-occurred with the consumption of waffles (i.e., the desired outcome). Analogously, seeing somebody with a glass of beer can make us crave having a beer, because of the previous co-occurrence of these events (Collins & Brandon, 2002).

This paper's central claim is that a similar principle may explain some crucial characteristics of grief. More precisely, I theorize that, throughout a life together, cues become associated with the presence of the loved one, which functions as desired outcome, and that because of this these cues may develop the potential to trigger craving for the loved one and to trigger an action tendency for searching behaviour. All three components of this theoretical statement —the roles of the cues, of the desired outcome and of the triggered responses— deserve comment

With respect to the role of the cues, it is important to note that it is assumed that these may be external and/or internal, depending on the individual learning history. An example of an external cue associated with the presence of the other could be a shared double bed or the place where the deceased used to work. An example of an internal cue could be feeling miserable or in need of social support, given that the deceased person used to make sure he/she was present in such situations (for an extensive discussion of conditioning with internal cues see Zaman, De Peuter, Van Diest, Van den Bergh, & Vlaeyen, 2016).

With respect to the claim that the presence of a loved one can function as a desired outcome, a recent study demonstrated that activating the mental representation of the lost one activates brain regions that are also central in addiction (O'Connor et al., 2008). It is also of note that, theoretically speaking, every stimulus can become a desired outcome (Moors et al., 2017), making the claim that the presence of a loved one can function as such a desired outcome noncontroversial. There is indeed no doubt that the presence of a loved is something that people value positively and is something for which people go to great lengths (e.g., travel a long way).

With respect to the triggered responses, appetitively conditioned responding appears to be a strong match for grief behaviour. The craving corresponds with the longing and yearning for the deceased person which numerous studies have identified as the cardinal symptom of PG (Prigerson et al., 2009; Shear, 2015). The action tendency for searching behaviour can be seen as corresponding to the urge to restore proximity to the lost person. This can occur literally by visiting the grave, but may also manifest itself in, for example, looking out for the deceased person in familiar places or the wish to die in order to be with the deceased person (Boelen, 2016; Boelen et al., 2006). In PG, these responses have two features that make them especially disabling. The first feature is that, by definition, symptoms persist for a very long time (i.e., they are prolonged). The second feature is that numerous stimuli and situations trigger these symptoms (Boelen et al., 2006; Lichtenthal, Cruess, & Prigersson, 2004; Raphael & Martinek, 1997). Both features fit well with an associative learning account and will be discussed in later sections of this paper (see sections on extinction and generalization).

¹ It is worth mentioning that additional evidence for this idea was obtained in a new laboratory model. In a recent series of three pilot studies, I consistently found that a symbolic representation of a loved one (more precisely, the appearance of the name of this person on the computer screen) can induce cue-elicited craving. In these studies, two circles of different size functioned as cues. One circle systematically preceded the appearance of the name, while the other circle never preceded its appearance. Participants reported more longing for the loved one when shown the former cue than when shown the latter cue (Y Boddez, unpublished observations).

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