

## Causal Attributions: A Review of the Past and Directions for the Future

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Causal attribution theory is one of the most extensively researched paradigms in social psychology. Recently, fMRI research, largely from the field of personality psychology, has suggested that the neurological structures involved in forming causal attributions may also be involved in emotion regulation. This suggests that these two distinct processes - causal attribution formulation and emotion regulation - may be related phenomena. More specifically, attribution formation may be a method of emotion regulation. In the field of clinical psychology, treatment approaches for depression emphasize the importance of effective emotion regulation strategies, and many treatment approaches for depression are informed by emotion regulation research. Nonetheless, it does not seem that clinical psychology has fully utilized findings from causal attribution research for the treatment of depression. Because causal attributions may be a strategy for emotion regulation, clinical psychology might well benefit from integrating personality research with social psychology research on causal attributions. This paper posits that there is a connection between emotion regulation, attributional style, and depression, and that clinical psychology would benefit from drawing upon causal attribution research. Doing so would combine developments from distinct areas of psychology in order to better inform both researchers and clinicians working with depression.

In E.O Wilson's (1998) pivotal book, *Consilience: The Unity of Knowledge*, Wilson highlights the need for communication between disparate fields in order to better understand the order of the world. He asserts that the merging of diverse perspectives is crucial for (a) the advancement of knowledge and (b) a greater understanding of the laws that govern the world. Considering the variety of subareas within psychology (e.g., personality, clinical, social, etc.), the field of psychology should not only be concerned with its consilience with other fields but also with communication and collaboration within itself. This internal consilience is important for the advancement of the field and is necessary in order to address the various complexities of human behavior. The purpose of this paper is to integrate causal attributions research from social psychology with emotion regulation research from personality psychology and to suggest how this research can be utilized in clinical psychology to better understand and treat depression.

### Causal Attributions

In his 1739 essay, *A Treatise of Human Nature*, philosopher David Hume asserts that understanding the causes of events is "an essential part in all our reasonings" (p. 93) that should be examined through experiments on which "we may hope to establish... a science" (p. xxiii). Such a revelation from 18<sup>th</sup> century philosophy is perhaps unexpected, but even more surprising is that attributions were not empirically studied for two centuries.

Over 200 years after Hume's treatise, Fritz Heider (1958) championed the first theory of attribution, which asserts that humans have an inherent need to understand the causes of behavior. His attribution theory was built on the following premises: people believe there are causes behind behaviors; people believe it is important to understand why others behave as they do; and the cause of a behavior is in a person, a situation, or both.

Heider (1958) believed that when individuals understand the causes behind an action or event, they are able to reduce the feeling that the world is unstable and unpredictable because they can identify what or who is responsible for the event. His attribution theory consisted of a three-step process where the person first observes an event, then determines the intention

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of the event, and finally makes an attribution about the event. As the last premise above suggests, these attributions are internal, external, or a combination of both. In other words, a person may behave in a certain way due to their disposition (internal cause), due to the environment (external cause), or due to their disposition *and* the environment (external and internal causes). Heider's assertion that attributions can be internal or external sparked research on causal attributions, and his theory was advanced by other social psychologists such as Jones, Davis, Kelley, and Weiner. These psychologists, among others, built one of the most extensively studied research paradigms in social psychology.

Jones and Davis (1965) expanded Heider's theory of attribution with their correspondent inference theory, which sought to explain how an individual might perceive or infer others' dispositions and intentions based on their actions. Jones and Davis asserted that individuals make correspondent inferences when they make judgments about a person's personality characteristics or disposition based only on their behavior. An example of a correspondent inference would be when an individual assumes that another person is evil because that person committed an evil act. According to the theory, correspondent inferences about an action are made when a behavior is perceived as intentional and negative. Therefore, if a person does good deeds, other individuals are less likely to assume that they are a good person than they are to assume that a person who does evil deeds is evil. Furthermore, individuals decide whether or not to make internal attributions about a person's behavior after engaging in an *analysis of uncommon effects*. In this analysis individuals observe the consequences of the behavior that occurred alongside the potential consequences that could have arisen as a result of other viable behaviors. If the consequences of the real action are similar to the potential consequences of other actions, the individual is more likely to make an internal attribution about the behavior.

Shortly after Jones and Davis (1965) established their correspondence inference theory, Kelley (1967) published a paper, "Attribution Theory in Social Psy-

chology," which has been widely cited in social psychology literature. While Jones and Davis wanted to know how people make internal (dispositional) attributions, Kelley was interested in both external and internal (dispositional) attributions. Specifically, he examined how people decide whether to make external or internal dispositional attributions. Kelley advanced Heider's (1958) attribution theory, which distinguished between external and internal attributions, by identifying three factors that influence attribution-making: consistency, distinctiveness, and consensus. When trying to understand the cause of someone's behavior, individuals often consider whether that action is stable. Does the person always act like that in a specific situation, even at different times? If so, then the person's behavior is seen as consistent and individuals are likely to make a dispositional attribution. The distinctiveness of the behavior, which can be determined by looking at whether a person engages in the same behaviors with different people or situations, also influences the attributions that people make. If a person acts similarly in other situations, then there is low distinctiveness about the behavior, and individuals will likely make a dispositional attribution. However, if the person acts very differently in other situations, it is more probable that others will attribute the behavior to the situation. Finally, attributions are shaped by consensus, or the extent to which other people act the same way in that situation or toward that particular stimulus. When a person behaves how most people would in a situation, making an external attribution is most reasonable. However, if the behavior seems unusual compared to what is expected in that circumstance, internal attributions will usually be made (Kelley, 1967). Kelley emphasized the idea that individuals make attributions based on the information they have about the consistency, distinctiveness, and consensus of a person's behavior.

Bernard Weiner was also interested in how individuals make attributions about behaviors and events, and he defined three factors that may influence a person's perceived locus of control. Weiner's (1974) theory of achievement attribution describes how a person's per-

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ceptions of event outcomes shape their thoughts and future behavior. In his theory, Weiner describes three causal dimensions: stability, controllability, and locus of causality. The locus of causality refers to whether the cause of an event is internal or external to the person. Weiner hypothesized that a perceived locus of causality affects an individual's reaction to a positive or negative event. Specifically, if the locus of causality is internal, people are more likely to have an affective response to it. The controllability dimension proposes that there are causes that are controllable and causes that are out of one's control. This is an important distinction because if a cause is thought to be out of our control, people are less likely to be persistent in their efforts in the future. The last dimension is stability, and it is concerned with whether the cause is stable or unstable. Stability inferences can affect what people expect to happen in the future. If an event is always due to the same cause (the cause is stable), then the event will become easier to predict than if the event can be precipitated by multiple causes.

In addition, Weiner (1974) focused on four factors to which a person can attribute a success or failure: ability, effort, task difficulty, and luck. These perceived causes of outcomes are classified as being (a) stable, uncontrollable, and internal (ability), (b) unstable, controllable, and internal (effort), (c) stable, uncontrollable, and external (task difficulty), or (d) unstable, uncontrollable, and external (luck). This three-dimensional attribution theory was pivotal because it allowed researchers to begin applying attribution research to the real world. What followed were several studies that explored how positive and negative events are understood, how people react to feedback, and how the way people interpret events influence their motivations and future behaviors (e.g., Brown & Rogers, 1991; Forsyth & McMillan, 1981; Metalsky & Abramson, 1981; Mullen & Riordan, 1988; Ross & Fletcher, 1985; Weiner, 1980).

After his initial attribution theory, Weiner (1980) began examining the link between attributions, self-esteem, and achievement. His results showed that consis-

tently successful students (high achievers) who reported having high self-esteem attributed their success to ability, which is an uncontrollable, internal, and stable attribution. However, after failing successful students tend to attribute their bad performance to a lack of effort, which is an internal and controllable explanation, or to unreasonable task difficulty, which is an uncontrollable but external explanation (Forsyth & McMillan, 1981; Weiner, 1992). These responses to failure are linked to the student's self-esteem and motivation (Pintrich & Schunk, 2002), purportedly because the causes of the failure are either controllable or external. External attributions after failure allow individuals to assign blame elsewhere for the failure, and this appears to help preserve individuals' self-esteem.

The hypothesis that psychologically healthy individuals are prone to attributing successes to internal factors and failures to external factors is now well supported (McAllister, 1996; Miller & Ross, 1975; Mullen & Riordan, 1988; Ross & Fletcher, 1985; Whitley & Frieze, 1985), and is referred to as the *self-serving bias* or *ego-enhancing position*. Because high achievers believe in their natural abilities, they are motivated to approach challenging tasks. When tasks are difficult, they are likely to persist because they believe that an exertion of effort will lead to success (Mullen & Riordan, 1988). However, low achieving students who have frequent failure experiences and low self-esteem tend to make internal attributions after failure and external attributions after success. Such attributions may perpetuate these students' tendency to be fearful and avoidant of challenges due to their lack of self-esteem. For these students, even when success is present it is often not enjoyed. This is because these students believe that their success is only due to luck or other factors outside their control (Weiner, 1980). Success experiences do not increase their self-esteem, and they remain unmotivated and unenthusiastic about challenging activities.

Many studies have focused on the self-serving bias, and more generally on how individuals protect themselves from experiencing negative affect after negative

events through selective attribution strategies. Individuals who adopt the self-serving bias are more likely to have a high self-esteem, and this may be explained by the fact that individuals with high self-esteem tend to focus on their strengths rather than their weaknesses and avoid negative thoughts about their performance (Dodgson & Wood, 1998). It seems that attributing success to oneself and failure to others serves to improve or maintain one's self-esteem (Brown & Rogers, 1991; Miller & Ross, 1975).

In addition, the attributions that people make can affect their mental health. An attributional style is the "tendency to make particular kinds of causal inference, rather than others" (Metalsky & Abramson, 1981, p. 38). Expanding on Seligman's (1975) theory on learned helplessness, Peterson and Seligman (1984) emphasized the importance of attributional styles to the understanding of depression. The authors asserted that although negative events and circumstances can precipitate depression, the onset of depression is better predicted by how individuals explain the causes behind events. Individuals who tend to have optimistic attributional styles are less likely to develop depression than those who adopt pessimistic styles (Abramson, Seligman, & Teasdale, 1978).

An optimistic attributional style is characterized by attributing successes to oneself and failures to the environment. These optimistic individuals are engaging in the self-serving bias. In contrast, individuals with pessimistic attributional styles blame themselves for failure and make external attributions for successes (Burns, Seligman, & Snyder, 1991). Optimistic attributional styles are healthier than pessimistic attributional styles. Pessimistic attributional styles have been linked to increased neuroticism (Alloy, Peterson, Abramson, & Seligman, 1984), a worsening of symptoms in schizophrenia (Donohoe, Donnel, Owens, & O'Callaghan, 2004), a higher susceptibility to helplessness (Burns, Seligman, & Snyder, 1991), and a greater chance of becoming depressed (Blackwood et al., 2003; Peterson & Seligman, 1987). Thus, it appears that self-serving attributional biases are often healthy in many ways, and

that pessimistic attributional styles can be detrimental to one's mental health.

### Emotion Regulation

A separate line of research in personality psychology that has emerged over the past couple of decades focuses on emotion regulation. Gross (1998) defines emotion regulation as "the processes by which individuals influence the emotions they have, when they have them, and how they experience and express these emotions" (p. 275). Individuals have been shown to vary in the extent to which they can manage emotion, and in the strategies they use. Gross and Thompson's (2007) *process model* of emotion regulation describes emotion regulation strategies and hypothesizes that these different approaches to managing emotion can predict the presence of psychopathology. Approaches to emotion regulation include situation selection, situation modification, and response modulation. Of particular importance to this paper are response modulation strategies, since individuals tend to have less control over situations than they do their reactions to situations.

Reappraisal, a type of *response modulation* (Gross, 2002), involves reinterpreting or reconstructing one's perception of a situation. This strategy allows emotion to be changed without physiological or interpersonal consequences, and is considered to be a healthy strategy for regulating emotion. In addition, reappraisal is positively correlated with positive emotion and negatively correlated with both negative emotion and overall low well-being, providing further evidence for the benefits of reappraisal (Campbell-Sills & Barlow, 2007). Another commonly used strategy, suppression, is considered unhealthy because it is correlated with higher sympathetic system activation and a greater stress response to negative emotion (Campbell-Sills & Barlow, 2007). Suppression involves hiding, inhibiting, or denying the experience of certain emotions. In addition to being an unhealthy long-term emotion regulation strategy, suppression has been found to be less effective for regulating emotion than reappraisal, and it is more likely to



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be employed by depressed individuals (Gross & John, 2003). This is consistent with research findings showing that depressed individuals tend to adopt maladaptive and less effective emotion regulation strategies than non-depressed individuals (Joormann, 2009; Slee, Garnefski, Spinhoven, & Arensman, 2008).

The mechanisms of emotion regulation are not well established. However, personality psychologists and affective neuroscientists have contributed several studies to the literature that explore the neural bases of emotion regulation. Many of these studies (Beauregard et al., 1998; Bush, Luu, & Posner, 2000; Davidson et al., 2002; Drevets, 1998; Simpson, Snyder, Gusnard, & Raichle, 2001) have examined how depressed individuals regulate emotion in comparison to healthy individuals, in order to highlight the neural differences between individuals who can successfully regulate emotion, and those who cannot. Multiple areas of the prefrontal cortex (PFC) have been found to be involved in emotion regulation, and depressed individuals often show hyperactivation in these areas. This diffuse increased activation may signify more, but less effective, emotion regulation efforts in depression. For example, there is greater medial PFC activation in depressed individuals than in healthy controls following sadness or anxiety induction (Beauregard et al., 1998; Drevets, 1998), and this increased activation in depressed individuals in the medial PFC may be an indication of rumination about a negative event (Beauregard et al., 1998). Rumination is known to play a role in sustaining negative moods (Joorman & Siemer, 2004).

In addition, increased activation of the orbital PFC (also referred to as the subgenual PFC) in depressed individuals is thought to reflect an attempt to control emotional responses, since this area corrects reactions that are not fitting to a situation. The orbital PFC is capable of inhibiting emotional response. Thus, activation here may indicate a person is trying to regulate or eliminate negative thoughts (Drevets, 1998). This suggests that depressed individuals may be attempting to regulate moods/emotions, but the sustained, heightened activation of this area compared to controls im-

plies that these attempts are not necessarily successful. While depressed individuals may work hard to reverse or reduce their negative emotions, they are often unable to effectively modify their emotional experiences.

Finally, the anterior cingulate cortex (ACC), which communicates with the rest of the PFC (Davidson et al., 2002), appears to be activated in depressed individuals in whom a feeling of sadness has been induced (Beauregard et al., 1998). This area is believed to be involved in emotion processing, conflict monitoring (Simpson et al., 2001), and emotion regulation (Beauregard et al., 1998; Davidson, 2002). Findings by Bush et al. (2000) suggest that the heightened ACC activation found in depressed individuals in comparison to healthy controls denotes an active but unsuccessful attempt to regulate emotion.

In conclusion, neuroimaging findings indicate that multiple areas in the PFC may be important in emotion regulation, including the medial PFC, orbital PFC, and ACC. Overall, depressed individuals have difficulties reversing negative thought patterns and reducing negative emotions they experience (Davidson et al., 2002). This finding is supported by the higher but ineffective activation in PFC areas compared to healthy controls. Beauregard et al. (1998) hypothesized that depressed individuals may have difficulty regulating emotions as a result of this abnormally high PFC activity. In addition, personality psychology research has found that depressed individuals tend to adopt ineffective and unhealthy emotion regulation strategies. Thus, it is possible that the hyperactivation found in PFC areas in depressed individuals reflects the ineffective strategies that personality psychologists have found depressed individuals to adopt. Taken together, research findings from affective neuroscience and personality psychology indicate that depressed individuals have difficulty regulating emotion, and this difficulty might be due to the ineffective emotion regulation strategies these individuals choose.

### **Causal Attributions and Emotion Regulation: Similar Mechanisms**

The findings presented thus far – that pessimistic attributional styles are linked to depression and that depressed individuals exhibit unhealthy and ineffective emotion regulation – are linked conceptually by depression. The remainder of this paper posits an explanation for the neurological and psychological relationship among these concepts.

Weiner, Russell, and Lerman (1978) hypothesize that making causal attributions serves as a mechanism of emotion regulation. Given findings from personality psychology and affective neuroscience on emotion regulation strategies and the mechanisms underlying emotion regulation, there is reason to believe that causal attributions are more than a social psychological concept concerned with how people interpret and interact with our world; causal attributions may clarify how individuals regulate emotion in ways that make them more or less susceptible to depression.

Recent research suggests that the neural mechanisms underlying causal attributions may be similar to those of depression. For example, Lieberman, Gaunt, Gilbert, and Trope (2002) found activation of the ACC during causal attribution formation and concluded that multiple PFC areas are activated in “propositional thought and internally generated inferences” (p. 200). Consistent with the notion of PFC involvement in attributions, medial PFC activity has been found to increase during social cognition (i.e. cognition involving social processes) in general (Ochsner, Knierim, Ludlow, Hanelin, Ramachandran, Glover, & Mackey, 2004), and during attribution determination specifically (Harris, Todorov, & Fiske, 2005). Findings from other studies also indicate that the medial PFC is involved in causal attributions and similar processes such as agent-centered inferences (Leslie, 1994) and intention determinations (Abu-Akel, 2003; Blakemore et al., 2003; Brunet, Sarfati, Hardy-Bayle, & Decety, 2000; Sabbagh, 2004). These findings indicate that attribution formation may share similar neural mechanisms with

emotion regulation and provide evidence for the notion that making attributions may be a means of regulating emotion.

Research has likewise implicated both the orbital PFC and the ACC in affect regulation (Davidson, Putnam, & Larson, 2000). Furthermore, abnormalities in structure or function in these same areas, among others (e.g., the hippocampus and amygdala), have also been associated with depression (Davidson, Pizzagalli, Nitschke, & Putnam, 2002). The activation of similar neurological areas during emotion regulation and causal attribution suggests that these processes are related on a neurobiological level. The association of these areas with depression further supports the role of these mechanisms – causal attribution and emotion regulation – in depression, from both a cognitive and neurobiological perspective.

### **Causal Attributions and Depression: Implications for Clinical Psychology**

Clinical psychology aims to better understand and treat various types of psychopathology, including depression. Indeed depression is one of the most extensively studied disorders in clinical psychology is depression and a leading cause of disability (Drevets et al., 1992). Each year millions of dollars are lost in productivity due to this illness, in addition to the costs associated with treatment (Van Horn, 2002). Unfortunately, the worldwide prevalence of depression has been increasing, with the age of onset becoming younger (Klerman & Weissman, 1989). Thus, the efficacious treatment of depression is of paramount importance.

According to the *Diagnostic and Statistical Manual of Mental Disorders* (4<sup>th</sup> edition, text revision), a diagnosis of major depressive disorder requires the existence of one or more major depressive episodes: extended periods of time characterized by several symptoms, one of which must be either consistently depressed mood or a significant loss of interest or pleasure in all or most activities (American Psychiatric Association, 2000). In other words, depression is an inability to regulate one’s

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mood – an inability to reduce negative emotions and increase positive emotions (Gross & Munoz, 1995).

Both emotion dysregulation and causal attributional style are central issues in depression (Gross & Munoz, 1995; Peterson & Seligman, 1987; Seligman, Schulman, DeRubeis, & Hollon, 1999). Depressed individuals often have a pessimistic attributional style (Anderson, Horowitz, & French, 1983) as well as negative cognitions about themselves (i.e., low self-esteem), both which have been linked to emotion regulation (Weiner, 1980). Furthermore, emotion dysregulation, attributional style, and self-esteem can all account for, or contribute to, the hopelessness and negative outlook that is often characteristic of depression (Beck, Rush, Shaw, & Emery, 1979). More positive or adaptive cognitions and attributional styles may prevent or ameliorate depression (Alloy & Abramson, 1979; Metalsky, Halberstadt, & Abramson, 1987) and sustain hope or positive expectations for the future. For some individuals, a positive attributional style may be adaptive in terms of emotional regulation.

Given the interrelationships among emotion regulation, causal attributions, and depression, it would seem natural to address causal attributions in therapy. This could be particularly useful in cases in which depressed mood involves negative attributions towards the self, such as guilt and self-blame. However, any maladaptive attributions, whether or not they involve attributions towards the self, could be a target of treatment.

Cognitive behavioral therapy (CBT), for example, explores the link between cognitions, emotions, and behavior, and often employs *re-attribution* as a method of encouraging patients to take into consideration multifactorial causes of a situation (Burns, 1980). However, most cognitive-behavioral handbooks do not include a detailed explanation or analysis of attributional style, nor do they discuss the cognitive factors involved in a causal attribution (i.e., locus of causality, controllability, stability, consistency, consensus, and distinctiveness). Including such information may add efficacy and generalizability to cognitive-behavioral treatments targeting moods or emotions that are related to attribu-

tions.

In Dialectical Behavioral Therapy (DBT), specifically targeting causal attribution styles could help in the *cognitive change* process of emotion regulation, which attempts to modify sensitivity to emotional cues. Particularly in DBT, emotion regulation is a major component of therapy and most DBT programs include multiple discussions of techniques and theories (including neurobiological mechanisms) of emotional control, though it seems that few explicitly discuss causal attributions (Linehan, Bohus, & Lynch, 2007; Braun, 2005). Causal attribution theory could easily be included as an advanced technique for clients and as a theoretical tool for DBT therapists, especially during treatment planning or case formulation.

In Narrative Therapy, a therapist might draw on causal attributions models to help a client to *re-author* and *re-story* their life experiences in a way that creates new, satisfying, and open-ended narratives (White & Epston, 1990). Along these lines, there is evidence outside of Narrative Therapy that the process of reshaping attributions may help undo some of the harmful motivational and emotional consequences of negative experiences (Forsyth & McMillan, 1991). In many cases, there is much that clinical psychology can gain from more actively utilizing causal attribution research, especially as it may relate to emotion regulation. However, there is also much that must be done in future research. For example, research must examine and explicate the relationships (neurological and psychological) between attributional style and emotion regulation, and their effects on mood. It seems highly probable that other factors, internal and external to an individual, interact with one's attributional style to affect mood – what are these other factors (e.g. the specific situation, other cognitive patterns)? Is a self-serving attributional style always associated with more positive mood? Perhaps there are some individuals for whom this is not so? Perhaps culture affects this? Clinical and other psychological research must explore these topics in order to effectively devise and evaluate interventions that aim to modify attributional style and thereby influence

emotion regulation and mood. In addition, the reverse pathways should also be examined: the effects of mood or other ostensibly unrelated interventions (e.g., psychiatric medication) on attributional style. Neurologically, the areas of the brain that seem to be activated when forming causal attributions are also activated during other processes, such as the medial PFC during social cognition (Ochsner, Knierim, Ludlow, Hanelin, Ramachandran, Glover, & Mackey, 2004). Are these processes also tied to attributional style? What other processes are associated neurologically or psychologically? To not examine these issues is to neglect research with convincing implications for the understanding and treatment depression. There is much to be gained from integration and communication between the subfields of psychology and this collaboration is necessary for proper care of clients. Such integration of knowledge can lead not only to new discoveries, but also, as E.O. Wilson urged, to greater human health and welfare (Wilson, 1998).

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