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Explanation, Cognitive Psychology of

An explanation is a judgment about why an event occurred. Explanations are drawn for numerous and varied events (e.g., the behavior of others, the weather, the movement of planets, natural disasters). Much of the psychological research and theory on explanation comes from work on Attribution Theory, which is the study of how people make judgments about others and themselves. Despite its name, attribution theory is not a single theory, but a large collection of minitheories and investigations. This article summarizes some of the major perspectives, theories, and research topics within this large body of work on the psychological study of explanation.

The study of explanation is an integral and well-researched topic in psychology, and understandably so. Explanations are ubiquitous in everyday life (e.g., Hsiang-Ling did well on the exam because she has wonderful quantitative skills), they influence affect (e.g., I'm angry at Joe because he intentionally broke my favorite vase), and they determine social behaviors (e.g., I helped Margaret because I thought she was really trying her best to succeed). It should be noted, however, that there are important differences between the lay person's goals in generating explanations and the scientist's goals in studying explanations. Lay people typically desire explanations that are understandable, informative, accurate, consistent with beliefs and expectations, and personally satisfying. In contrast, scientists are interested in the psychological processes that determine what kinds of explanations people generate, as well as the affective, cognitive, and behavioral consequences of drawing different kinds of explanations.

1. Heider, Founder of the Psychological Study of Explanation

Interest in explanation processes and consequences can be traced at least as far back as the fourth century BC, with Aristotle's book on *The Rhetoric*. However, if a particular individual had to be singled out as the founder of the scientific study of explanation, it would surely be Fritz Heider. Heider's insights (Heider 1944, 1958) laid the foundation for much of the research and theory in the study of explanation. Consider three of his important ideas. First, Heider suggested that people want to understand the stable causes of a given behavior so that they can predict future behavior. He wrote, 'It is an important principle of common-sense psychology ... that man grasps reality, and can predict and control it, by referring transient and variable behavior and events to relatively unchanging underlying conditions, the so-called dispositional properties of his world' (1958, p. 79). Thus, just as astronomers may seek to explain the orbit of planets

so that they can predict their future positions in space, people seek to explain the actions of individuals so that they can predict the future actions of those individuals. Second, Heider emphasized the distinction between personal and situational causes. This is a fundamental distinction in the study of explanation, and it seems to capture a great deal of common sense reasoning as well. For example, if an athlete performs poorly, one might decide that something about the athlete is the cause or one might decide that something about the field conditions is responsible. Third, Heider suggested that people tend to focus on personal causality and underestimate the influence of the situation. Heider (1944) wrote: 'Often the momentary situation which, at least in part, determines the behavior of a person is disregarded and the behavior is taken as a manifestation of personal characteristics' (p. 361). This tendency is what later came to be called the correspondence bias (see below). Heider's insights provided the impetus for numerous theories and investigations. Two of the most well known theories are Kelley's Covariation Model and Jones and Davis's Correspondent Inference Theory.

2. Intuitive Scientists and Logical Explanations

The theories of Kelley, and Jones and Davis were formulated during a time when many psychologists viewed people as logical, rational, 'intuitive scientists.' Thus, it is not surprising that both theories emphasize logical principles that a sophisticated person could use to make rational judgments. This logical perspective has been very influential in the study of explanation, although, as described below, it is not the only perspective that theorists have found useful.

2.1 Kelley's Covariation Model

Suppose an acquaintance of yours, Torsten, says to you, 'You have to try Kjelleren, that new restaurant on Storgata. It's great!' This recommendation can be explained in several ways. Something about the restaurant may be the cause, such as its fine food or pleasant atmosphere. Something about Torsten may be the cause. Perhaps he is easily impressed and raves about every restaurant he tries.

Kelley (1967) suggests there are three types of information that you should consider. First, you should consider consensus information. Consensus pertains to how other people react with regard to the target object. If others also rave about Kjelleren, consensus is high. If they dislike Kjelleren, consensus is low. Second, you should consider distinctiveness information. If Torsten recommends every restaurant he samples, his recommendation on this occasion is not very distinctive (distinctiveness is low). But if he rarely recommends restaurants, his comment is dis-

tinctive (distinctiveness is high). Finally, you should consider consistency information. If Torsten's reaction has been positive every time he has been to Kjelleren, consistency is high. But if he disliked Kjelleren previously, consistency is low.

Different combinations of these three types of information suggest different conclusions. For example, suppose others do not seem to like Kjelleren (low consensus), Torsten often recommends restaurants (low distinctiveness), and Torsten often recommends Kjelleren (high consistency). This suggests that something about Torsten is the cause of his recommendation. In contrast, suppose others also like Kjelleren (high consensus), Torsten rarely recommends restaurants (high distinctiveness), but Torsten consistently recommends Kjelleren (high consistency). Now it seems that something about Kjelleren is the cause.

Of course, sometimes people lack the information, ability, or motivation to perform such a sophisticated analysis. In this case, one may use the discounting principle, which states that 'the role of a given cause in producing a given effect is discounted if other plausible causes are present' (Kelley 1972, p. 8). For example, suppose one sees a person who appears anxious. If it is known that an anxiety-provoking event is present, one should discount the person's personality as a cause of the anxiety displayed on this occasion.

2.2 Jones and Davis's Correspondent Inference Theory

Suppose the following three behaviors are observed. First, Elena is leaving a funeral and she appears sad. Second, Jason declines a promotion in the company where he works. Third, at a party Edward is arguing vehemently that it is every person's responsibility to conserve energy, recycle, and protect endangered wildlife. What should one conclude about the personalities of these individuals? Jones and Davis's Correspondent Inference Theory (Jones and Davis 1965, Jones 1990) suggests that two pieces of information are important to consider. First, one should consider the expectedness or normativeness of the behavior. When people behave in ways that are normative for the situation (e.g., sad Elena leaving the funeral), their behavior is relatively undiagnostic of their personalities. Second, one should consider the clarity of the behavior with regard to its implications (there are numerous reasons why Jason might have declined the promotion). When many explanations are possible, one cannot be certain which is the correct one.

However, when behavior is atypical and has clear implications, a personality inference can be drawn. In the case of Edward, although one could be mistaken, a reasonable inference is that his behavior reflects an underlying disposition, specifically, that he is an environmentalist. This is a correspondent trait inference. In Jones's words, 'a correspondent inference is