

Is Causal Status Weighed Differently in Categories of Causes than in Categories of Effects?

Nathalie James (njames@ucla.edu)

Department of Psychology, University of California, Los Angeles
1285 Franz Hall, Los Angeles, CA 90095 USA

Catherine M. Sandhofer (sandhof@psych.ucla.edu)

Department of Psychology, University of California, Los Angeles
1285 Franz Hall, Los Angeles, CA 90095 USA

Keywords: Categorization; causal reasoning.

Introduction

Cause features have often been observed to weigh more than effect features in categorization, a phenomenon known as the causal status effect (Ahn, 1998). In psychiatry, for example, both experts and novices rate symptoms to be more important to their concept of a mental illness the deeper these symptoms lay in the causal network that defines the illness in their mind (Kim & Ahn, 2002).

What motivates people to form and to use particular categories may contribute to this effect. Categories can group the effects of an underlying cause, the causes of a subsequent effect, or both simultaneously (e.g. fig. 1). The causal relation that captures a person's attention at the time the category is used may affect how that person weighs the category's features. The focal purpose (FP) hypothesis states that people give more weight to features that are close to the relation that is the focus of their attention. If a participant's purpose were to help depressed patients address an underlying trauma, the FP hypothesis predicts that they would weigh causally deep symptoms of depression more than peripheral ones because those symptoms are proximal to the cause; if their purpose were to help these patients function in the workplace, they would weigh peripheral symptoms (e.g. suicidality) more than deep ones, provided these are more proximal to the effect.

The causal status (CS) hypothesis, by contrast, suggests that causally deep features are always heaviest, because they provide more inductive power (Ahn, 1998). In western culture, however, illnesses are ostensibly the results of underlying causes (e.g. viruses, genes, traumas, etc.). A cultural tendency to justify illness categories by their antecedents may, in earlier experiments, have shifted the weight of the category's own features toward more deeply causal features, which are closer – both probabilistically and causally – to those antecedents.

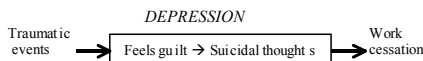


Figure 1: *Depression* is a rung in a larger causal chain

The Study

This study asks whether deep features *de facto* weigh more in categorization than peripheral ones, as the CS hypothesis states, or whether features that lie closest to the focal purpose of the category weigh the most, as the FP hypothesis suggests. To do

this, this study examines feature weights in categories whose effects are emphasized. Psychiatric categories were studied because of the potential relevance of these findings to professionals who discuss patients with each other but who focus on different causal relations involving the illness (e.g. psychiatrists vs. social workers).

Method

Sixty undergraduates with no professional psychiatric experience read about 5 mental illnesses. They either read that professionals attend to these mental illnesses' symptoms because these help detect severe underlying abnormalities, or that they attend to them because they cause severe social maladjustment. For each illness, participants then rated how important each of the illness's symptoms were to their concept of the illness. For each, they also rated the likelihood that two hypothetical patients suffered from the illness: one patient with symptoms commonly thought to be deep and the other with symptoms commonly thought to be peripheral.

Results and discussion

The direction of the correlation between causal depth and concept centrality was compared across conditions. A positive correlation in both conditions would support the causal depth hypothesis. A negative correlation in the condition that emphasized the effects of the illnesses would support the focal purpose hypothesis that features are weighed by their proximity to the concept motivating category use. A difference in the strength of two positive correlations may indicate either that the two hypotheses account for independent effects, or that the manipulation was too weak to overcome a cultural bias toward focusing on the sources of illnesses.

References

- Ahn, W.-K. (1998). Why are different features central for natural kinds and artifacts? The role of causal status in determining feature centrality. *Cognition*, 69(2), 135-178.
- Kim, N. S. & Ahn, W.-k. (2002). Clinical Psychologists Theory-Based Representations of Mental Disorders Predict Their Diagnostic Reasoning and Memory. *Journal of Experimental Psychology: General*, 131(4), 451-476.