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The Causal Structure of Person Types
and Stereotypes



I can trace my interest in causality back to my undergraduate years, when I became acquainted with philosophical thinking on the topic. I was delighted when, as a first-year graduate student at the Ohio State University (OSU), I had the opportunity to work with Craig Anderson. Craig was spending the year (1984–85) visiting at the OSU, and he offered a stimulating graduate seminar on causal thinking covering in part his ongoing and fascinating research on knowledge structures. I could not believe my luck when Craig indicated that he was willing to work with me! The fruits of our joint research (Anderson & Sedikides, 1991; Sedikides & Anderson, 1992, 1994) on implicit personality theory were most rewarding for me, both professionally and personally. One of these fruits, however, the Sedikides and Anderson (1994) article, did not appear to be that sweet to my colleagues. In fact, it has been more forbidden than sweet.

This article capitalized on the so-called typological view of person perception (Anderson & Sedikides, 1991). People, this view has it, think about others' personalities in terms of types. A person type consists of several traits. For example, the type "depressed" consists of the traits *lonely*, *gloomy*, *pessimistic*, *unhappy*, and *fearful*. The type "intellectual" consists of the traits *intelligent*, *efficient*, *competent*,

and *studious*. And the type "unsocialized" consists of the traits *rebellious*, *disobedient*, *inconsistent*, *careless*, and *lazy*. From a methodological standpoint, person types are operationalized as clusters. Cluster analysis establishes traits as members of a given type according to two criteria: how close traits are to each other, and how far traits are from other clusters.

Person types have interesting properties. Knowing one trait within a given type allows one to predict other traits in the same type. More importantly, traits within types have a rather mysterious form of interconnectedness. Traits hang out with each other. Is it because traits are seen as covarying or associated with each other, as indicated by Pearson product-moment correlation coefficients? For example, if one is seen as honest, one may also be seen as trustworthy. Alternatively, is it because traits are summarized in terms of global dimensions such as evaluation (i.e., positive/negative) or dynamism (i.e., strong/weak), as typically indicated by multidimensional scaling (MDS) analyses? Albeit plausible, these possibilities could not fully account for the data (Anderson & Sedikides, 1991). What is it, then, that keeps the traits together within a type? What sort of glue is this?

We (Sedikides & Anderson, 1994) reasoned that this glue is causal. Traits within each person type are seen as causing each other. Take, for instance, the type "depressed." Being *lonely* may cause someone to be *gloomy* and *pessimistic*, which in turn causes that person to be *unhappy* and subsequently *fearful*. Now, think of the type "intellectual." Being *intelligent* makes someone *studious*, which turns him or her into *efficient* and, in the long term, *competent*. Finally, consider the type "unsocialized." Being *lazy* leads someone to be *careless*, which causes that person to be *inconsistent*, which (perhaps in reactance to frequent negative feedback) makes him or her *disobedient* and, in the long run, *rebellious*. Such causal sequences made sense to us.

We put these ideas to the test. Before I describe the testing procedure, I will digress a little and define three constructs. A given person type includes both core and noncore trait members. *Core members* are those traits that are intercorrelated highly; that is, they are the strongest, or most prototypical, members of that person type. *Noncore members* are those traits that have the lowest intercorrelations with the other members; they are the weakest members of the type. Finally, I will need to define *strong nonmembers*. These are traits that do not belong to the person type in question (i.e., they are not cluster members) but nevertheless have two notable properties: They feature (a) higher average intercorrelations with the core members than the noncore members, and (b) smaller MDS distances from the core members than the noncore members. Despite these properties, strong nonmembers are intriguingly seen as a poorer fit with individual core members than are noncore members (Anderson & Sedikides, 1991).

Back to the testing of the idea that traits within each type are causally interconnected (Sedikides & Anderson, 1994, Experiment 1). For each person type, we derived all possible combinations of two kinds of trait pairs. The first kind of pair was core/noncore members (32 pairs in all). The second kind of pair was core

members/strong nonmembers (150 pairs in all). Then, we asked participants to make causation ratings on those 182 pairs. In particular, for each trait pair, participants made the following judgment: how likely is it for the first trait in the pair to cause or underlie the second trait?

We proceeded with comparing the mean causation rating for core/noncore member pairs with the mean causation rating for core/strong nonmembers pairs. What would constitute support for the hypothesis that person types consist of causally linked traits? Simply, the average causation rating for core/noncore members trait pairs ought to be higher than the average causation rating for core/strong nonmembers trait pairs. There is a way to put it in English. Noncore members ought to be more causally related to the core members than are strong nonmembers, even though the latter are both more highly correlated with core members and closer in MDS space to core members. This is indeed what we found! The hypothesis that causal connections glue together traits within person types received empirical backing.

We tested the same hypothesis in a different way (Sedikides & Anderson, 1994, Experiment 2). We asked whether traits within a person type are seen as more causally related to one another than to other traits that share the *same* MDS space. We relied on three sets of closely related person types (from Anderson & Sedikides, 1991). For each set, participants rated how causally related they perceived the various trait pairs to be; that is, they judged how likely a trait was to cause or underlie another trait. They rated all possible pairs of traits within the relevant MDS space. Then, we compared average within-type ratings (pairs of traits from the same person type) with average between-type ratings (pairs of traits not from the same person type). The hypothesis was, once again, confirmed. Within-type members were seen as more causally linked to each other than to members of other types, even when all were located in the same MDS space.

The research has implications for understanding person perception and person memory. The research consolidated the finding that people perceive others in terms of person types. More to the point, the research provided insights into the internal structure of person types: traits within each type are causally connected. This has implications for the person memory literature, which is concerned with the processing of information that is consistent or inconsistent with a prior impression. A problem that has plagued this literature has to do with adequate conceptual and operational definitions of consistency or inconsistency. Our findings addressed this problem. A prior impression can be conceptualized as a trait in a given person type. If so, consistent traits are those with positive causal connections to this trait, whereas inconsistent traits are those with negative causal connections to this trait.

Our research also has implications for intergroup perception (i.e., stereotyping). Person types can be broadly conceived as a form of stereotypes. As such, our research alludes to the complex structure of stereotypes. Often, stereotypes are seen as incoherent or as having evaluatively opposite traits. From the perspective of our research, such stereotypes are not incoherent; rather, they have an orderly

causal structure. In particular, the evaluatively opposite traits are linked causally. Such stereotypes may consist of a hierarchically arranged system of features, so that the superordinate feature (e.g., ethnicity, age, gender, occupation) is perceived as causally linked to two subordinate traits that are themselves seen as negatively linked. For example, the type "actor" may be causally linked to both *gregarious* and *self-absorbed*, even though these two traits are negatively linked with each other. Likewise, the type "old" may be causally linked to *wise* and *out of touch*, even though these two traits are negatively related to one another.

In addition, our research has implications for self-perception, and in particular self-complexity. One way in which this construct has been operationalized is by having participants sort a number of traits into groups according to which traits seem to belong together. What implicit rules do participants follow in the trait sorting task? Our findings suggests that they follow implicit causality rules. They toss traits in a pile on the basis of person types, according to the "glue" of causality. Here, however, it is possible that, strength of causal connections being equal, positive traits are favored more than negative traits, a hypothesis that awaits verification. In fact, with recent advances in the measurement of implicit cognitions, causal connections in self-types (and also person types and stereotypes) would be better understood.

Furthermore, our conceptualization of stereotypes as person types provides a compelling explanation for why stereotypes are resistant to change. Traits comprising stereotypes are causally interconnected, and causal connections are notoriously resistant to change. At the same time, our research gives some guidance on how to proceed with a stereotype change agenda. Persuasive communication about ethnic, age, gender, weight, or occupational stereotypes that focuses on causal thinking (e.g., challenging malicious causal links or fostering benign links) is likely to be more effective than comparable communication that focuses on non-causal thinking (e.g., moralizing).

Our article, at the time, appeared to our biased eyes as a textbook case of a "good" article. It addressed an important problem; relied on a solid rationale; offered a novel hypothesis that could account for longstanding controversies in the field; used elaborate methodology; produced hypothesis-confirming results; and promised to be generative, with implications relevant to both (basic and applied) research as well as real-world interventions. The article reflected a programmatic, theory-driven approach to research, and produced applicable findings. What happened, then?

Granted, the article has not been completely ignored. A Google search (September 2010) indicated that it has been cited 25 times. However, this little-engine-that-could has not exactly taken the field by storm. Why so, it is hard to tell. Perhaps because I did not follow it up and did not pursue the implications of these findings. The field (like any vibrant and diverse scholarly field) needs to hear a certain message again and again, and then once more, before it begins to assimilate it. Although these studies were part of programmatic research, they came at the tail

end of it. Thus, a new wave of experimentation that would build on the latest findings and produce an extended body of work might have brought along better the idea. Perhaps the reason why the article was not terribly influential has to do with the methodology: It was rather involved and cumbersome. Or, perhaps the message was not pitched at the right tone or level of analysis for the intended audience. Or, perhaps the idea (horror of horrors) was not that revolutionary. And a contributing factor may be that subsequent research agendas did not prioritize causal social knowledge or stereotype structure. We shall never know.

Regardless, I felt I benefited a lot from this work. I appreciated better Craig Anderson's theoretical orientation and methodological sophistication; I satisfied my interest in causal structures through a grounded, empirical approach; I made renewed contact with the person memory and stereotyping literatures; and I familiarized myself better with interesting statistical techniques. Last but not least, I changed the way I think about cognitive structures. To me, a "proper" cognitive structure is a causal structure. Research may end up being relatively unappreciated from others (usually for good reasons), but not necessarily from the perspective of the researcher.

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