

## PREDICTING BEHAVIOR: WHY, WHAT FOR, AND HOW

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### Abstract

The paper deals with predicting behavior in psychology. After introducing the importance of prediction in science and personal life, the failure of predicting behavior in two major domains - of personality traits and behavior and attitudes and behavior - is described. The implications, the attempts at improving the predictions and the conclusions are presented. The following part is devoted to describing the model of cognitive orientation which is a motivational-cognitive theory and methodology enabling the understanding, prediction, and changing of behavior in different domains, e.g., daily life, physical diseases and psychopathology. The basic constructs and processes of the model are presented.

**Keywords:** *Cognitive orientation, prediction, attitudes, personality, beliefs.*

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### 1. Predicting in the framework of psychology

Predicting behavior is considered as a basic constituent of psychology. Predicting is important for promoting the science of psychology but has also applied benefits in therapy and education, as well as personally for enhancing self-control, and self-knowledge.

However, the attempts of predicting behavior turned out increasingly to be difficult. The two major research domains that demonstrated clearly the failure of predicting behavior dealt with the relations of personality traits and of attitudes with behavior.

#### 1.1. Personality traits and behavior

Most of the studies dealt with examining the correlations between scores on personality questionnaires and the behaviors referred to in these questionnaires, that included behaviors of all kinds, such as emotional, motor, and cognitive. The expected relations were in regard to actual behaviors, assessed or observed in reality, rather than assumed behaviors or reported by the individual themselves. The results showed clearly that the relations between the traits or personality tendencies and the corresponding behaviors were mostly nonsignificant or low and barely significant (Wu & Clark, 2003). The results did not improve appreciably when different methods were applied for assessing behavior, such as aggregate evaluations of behavior, focusing on patterns of behavior, on highly specific behaviors, on habituated behaviors, and enhancing the individuals' awareness of the assessed behavior.

The list of attempts to account for the failure in prediction includes reasons, such as depletion of the reservoir for the trait after frequent evocation; behaviors are primarily bound to situations and are not consistent across situations; traits are not stable tendencies; the stability of traits is overestimated in regard to others; the behavioral expression of the same trait may differ in different people; individuals differ in the degree to which their traits and behavior are related.

#### 1.2. Attitudes and behavior

The studies of attitudes and behavior dealt with examining the relations between the scores of subjects on questionnaires indicating support for specific attitudes and the corresponding behaviors. Again, the mass of studies showed that the relations were at best very low, barely significant, e.g., a person may score high on the attitude of honesty or respecting others or supporting the ideology of a certain party but in reality, these attitudes do not correspond to behaviors. Also attempts to replace attitudes with more specific constructs such as intention, norms or goals did not yield significant relations with behaviors (Armitage & Christian, 2003).

Again, excuses for the failure in prediction claimed that the attitudes were not clearly formulated, that their relevance for the behavior was not grasped, that the time span between learning the attitude and manifesting the behavior was too long, or the attitude and the behavior represented different ranges of manifestation (Snyder & Ickes, 1985).

In regard to both attitudes and traits it was claimed that human behavior is unpredictable because people are unreasonable while behaviors require conscious decisions based on weighing costs and benefits; or that people are reasonable but life is unpredictable; or that both people and situations are predictably unreasonable.

### **1.3. Conclusions of different kinds and on different levels**

The lack of support for the expectation that traits or attitudes would be related to behavior is disconcerting. If traits are not related to behavior, then one may wonder what use do we have for the personality questionnaires and or personality traits in general. However, the lack of support in regard to attitudes and behavior is more serious because attitudes are manifestations of values and norms, which play an important role in culture and education. If these values are not related to behavior, then educational efforts are set in doubt.

However, instead of discarding the constructs of traits, attitudes, norms, and goals as useless because they do not predict behaviors our suggestion is to focus rather on developing new conceptions about what they do reveal or enable, for example, that traits are patterns of meaning assignment variables that guide our perception and experiencing of the world; norms are triggers for considering values; goals are indicators of orientation in the behavioral sphere; while self-reports about behavior are confrontation with images of oneself one would like to project to oneself and others (Kreitler & Kreitler, 1990).

Moreover, before accepting the conclusion that behavior cannot be predicted and moving ahead, we suggest to reconsider the situation. In some cases, a disease is not curable with the existing medications, but it may be cured when more or other medications are devised or applied. Thus, the suggestion is to try another approach and construct a different model of prediction.

## **2. Constructing a new model for predicting behavior**

It is evident to a great many researchers that the key to understanding the impact of psychological factors on behavior should be sought in cognition. Cognitive elements would constitute the tools for constructing a new model. What elements of cognition could play a role in regard to behavior? Beliefs is the major component. Beliefs are units that come in different forms and kinds. For example, there are beliefs about the behavior, about appropriate situation for the behavior, about the suitable triggers of the behavior, about the reaction of others to the behavior, or about its evaluation. But do these beliefs include any indication of dynamics or formation of action? Analysis shows that the same applies to the key constructs of the ‘health belief model’ which is one of the best in this domain: perceived susceptibility, perceived severity, perceived benefits of the suggested action, and perceived barriers for its implementation (Jenz & Becke, 1984).

## **3. The key constructs of the Cognitive Orientation (CO) model**

The CO describes major processes intervening between input and output. It does not assume that behavior is guided by logical decision-making, or is subject to conscious voluntary control. Instead, it shows how behavior proceeds from meanings and clustered beliefs (Kreitler & Kreitler, 1976). The beliefs may orient toward rationality but also in other directions, and the outcome may seem rational or not regardless of the beliefs that oriented toward it. Further, the theory focuses on actual, observable overt behaviors as distinct from intentions, self-reported behaviors and commitments or decisions to act.

The CO theory consists of a central core model that refers to molar observable behavior but includes also further specific models that deal with physical health, emotional behavior, cognitive behavior and psychopathology. A large body of data demonstrates the predictive power of the CO theory in regard to a great variety of behaviors, including achievement, responses to stress, undergoing medical tests, eating disorders, etc., in individuals differing in age (4 to over 90), gender, ethnic background, education and IQ level (i.e., retarded individuals) and mental health (e.g., schizophrenics, paranoid) (Kreitler & Kreitler, 1982).

The major theoretical assumption of the CO approach is that cognitive contents and processes play an active-dynamic role in regard to behaviors. Behavior is considered a function of a motivational disposition, which determines the directionality of behavior, and a performance program, which determines the manner in which the behavior is carried out.

According to the CO theory, the processes intervening between input and output are grouped into four stages, characterized by metaphorical questions and answers. The first stage is initiated by an external or internal input and is focused on the question “What is it?” which guides the processes enabling the identification of the input by a limited ‘initial meaning’ as either a signal for a defensive, adaptive or conditioned response, a molar action, an orienting response, or as irrelevant. The second stage is devoted to further elaboration of the meaning of the input, focused on the question “What does it mean in general and what does it mean to or for me?” which results in an enriched generation of interpersonally-shared and personal meanings in terms of beliefs, designed to determine whether these beliefs require a behavioral

action. A positive answer initiates the third stage focused on the question "What will I do?" The answer is based on beliefs of the four following types: a) Beliefs about goals, which refer to actions or states desired or undesired by the individual (e.g., 'I want to be respected by others'); b) Beliefs about rules and norms, which refer to social, ethical, esthetic and other rules and standards (e.g., 'One should be assertive'); c) Beliefs about oneself, which express information about the self, such as one's traits, behaviors, habits, actions or feelings (e.g., 'I often get angry') and d) General beliefs, which express information about reality, others and the environment (e.g., 'The world is a dangerous place'). The beliefs refer to deep underlying meanings of the involved inputs rather than their obvious and explicit surface meanings. The scoring of the beliefs is based on assessing the extent to which they support or not the indicated action. If the majority of beliefs in at least three belief types support the action, the cluster of beliefs generates a unified tendency which represents the motivational disposition orienting toward the performance of the action.

The next stage is focused on the question "How will I do it?" The answer is in the form of a behavioral program, which is a hierarchically structured sequence of instructions specifying the strategy and tactics governing the performance of the act. There are four basic kinds of programs: a) Innately determined programs, e.g., controlling reflexes; b) Programs determined both innately and through learning, e.g., controlling instincts or language behavior; c) Programs acquired through learning, e.g., controlling culturally shaped behaviors and d) Programs constructed ad hoc, in line with relevant contextual requirements.

### **3.1. Cognitive Orientation: The methodology of behavior prediction**

The predictions are based on applying the standardized procedure based on the CO theory (Kreitler, 2004). The construct applied for predicting behavior is the motivational disposition, whose strength is assessed by means of a CO questionnaire, which examines the degree to which the subject agrees to relevant beliefs orienting toward the behavior in question. The relevant beliefs are characterized in terms of form and contents. In form, they refer to the four types of beliefs, namely, beliefs about goals, rules and norms, about oneself and general beliefs about others and reality. In contents, the beliefs refer to the meanings underlying the behavior in question (called "themes").

The themes of a particular CO questionnaire are identified by means of a standard interviewing procedure applied in regard to pretest subjects who manifest the behavior in question and to control subjects. The procedure consists of interviewing the subjects about the meanings of relevant key terms of the behavior followed by sequential (three times) questions about the personal-subjective meanings of the given responses. Repeating the questions about the meanings reveals deeper-layer meanings. Those meanings that recur in at least 50% of the interviewees with the behavior of interest and in less than 10% of the controls are selected for the final questionnaire. As a result, the beliefs in a CO questionnaire do not refer directly or indirectly to the behavior in question but only to the themes that represent the underlying meanings of this behavior. Validity of the CO questionnaire is confirmed if it enables the prediction of the behavior also in the second sample. For example, themes that concern coming late are 'respect for others', and 'deciding on priorities'.

The themes and belief types define together a prediction matrix, with the belief types as headings of the columns and the themes in the rows. A CO questionnaire usually consists of four parts presented together in random order, each part representing one of the four belief types, in the form of beliefs referring to different theme-contents. Participants are requested to check on a 4-point scale the degree to which each belief is true (or correct) to them. The major variables provided by the CO questionnaire are scores for the four belief types and for each of the themes. The latter are often submitted to factor analysis for the sake of clustering.

### **References**

- Armitage, C. J., & Christian, J. (2003). From attitudes to behaviour: Basic and applied research on the theory of planned behaviour. *Current Psychology*, 22, 187-195.
- Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. *Health Education Quarterly*, 11(1), 1-47.
- Kreitler, S. (2004). The cognitive guidance of behavior. In J. T. Jost, M.R. Banaji, & D.A. Prentice (Eds.), *Perspectivism in social psychology: The Yin and Yang of scientific progress* (pp. 113-126). Washington, DC: American Psychological Association.
- Kreitler, H., & Kreitler, S. (1976). *Cognitive orientation and behavior*. New York: Springer.
- Kreitler, S., & Kreitler, H. (1990). *The cognitive foundations of personality traits*. New York: Plenum.
- Snyder, M., & Ickes, W. (1985). Personality and social behavior. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (3<sup>rd</sup> ed., pp. 883-947). New York: Random House.
- Wu, K. D., & Clark, L. A. (2003). Relations between personality traits and self-reports of daily behavior. *Journal of Research in Personality*, 37, 231-256.